

ColorQuick / Clarios Service Manual

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Contents

Warnings.....	6
1 Introduction	9
2 System Overview	10
2.1 Clarios System Description	10
2.2 Clarios System Components Overview	11
Clarios Workstation Computer	12
Clarios Server Computer	13
On-Press Computer	14
Color Manager Computer	14
Network Connections.....	14
2.3 Powering On the Clarios System.....	15
Reset Clarios Server Computer	17
Messages during Clarios Startup.....	17
2.4 Exiting Clarios and Turning Off Clarios Workstation Computer.....	18
2.5 On-Press Power	19
3 Customizing the System.....	20
3.1 Utilities View – Configuration	20
3.2 Display Options	21
3.3 User Selections	23
3.4 Passwords.....	26
Set Security Levels.....	27
Set User Policy Rights.....	27
3.5 Preferences.....	28
3.6 Tolerance Groups.....	30
Create a New Tolerance Group	31
Duplicate a Tolerance Group	32
Remove a Tolerance Group.....	32
3.7 Sampling Rules	33
Create a New Sampling Rule.....	34
Duplicate a Sampling Rule	35
Remove a Sampling Rule	35
3.8 Paper Classes.....	36
Name Paper Classes.....	36
3.9 Ink Manufacturers.....	37
Name Ink Manufacturer	37
3.10 Paper Types.....	38
Create a New Paper Type	39
Duplicate a Paper Type	40
Remove a Paper Type.....	40

- 3.11 Ink Types.....41
 - Create a New Ink Type42
 - Duplicate an Ink Type46
 - Remove an Ink Type46
- 3.12 Color Bar Configuration47
 - Import a Color Bar47
 - Remove a Color Bar48
- 4 Color Bars49
 - 4.1 Clarios Color Bars49
 - RRS Color Bar.....49
 - 4.2 Color Bar Types50
 - Primary Types50
 - Secondary Types.....50
 - 4.3 Color Bar Files Import.....50
 - 4.4 Color Bar Changes.....50
 - 4.5 Color Bar Menu51
 - 4.6 Customized Color Bars.....51
- 5 Maintenance.....52
 - 5.1 Cleaning Probe Heads52
 - Clean Standard Probe Head and Calibration Plaque52
 - Clean “Stay Clean” Probe Head and Calibration Plaque.....57
 - 5.2 Checking Overhead Brackets & Fasteners for On-Press Units64
- 6 Replacement Parts.....65
 - 6.1 Clarios Workstation Computer.....65
 - Replace Clarios Workstation Computer66
 - Restore Files to New Computer after Replacement66
 - 6.2 Clarios Server Computer67
 - Replace Clarios Server Computer67
 - Restore Files to New Computer after Replacement67
 - 6.3 On-Press Module (OPM)68
 - OPM Initialization.....69
 - Troubleshoot OPM Initialization71
 - Alternate Method to Troubleshoot OPM Initialization74
 - Replace On-Press Computer.....75
 - 6.4 Scan Head76
 - 6.5 Press Signal Interface78
 - Replace the Press Signal Interface.....80
 - 6.6 Quadrature Encoder Assembly.....81
 - Run on One Sensor87
 - Replace Encoder Sensors88
 - 6.7 Calibration Cover.....89
 - 6.8 Roller Guards90

6.9	Idler and Measure Rollers	91
6.10	Servo Drive Assembly	92
	Remove Servo Drive Assembly	92
	Replace Servo Drive Assembly	93
	Test Servo Drive Assembly.....	93
6.11	Probe Head Carriages.....	94
6.12	White Ribbon Cables.....	95
	Probe Head Cable Assembly.....	96
	Replace White Ribbon Cable.....	97
6.13	Limit Switches	101
6.14	Torque Specifications.....	103
7	Diagnostics.....	104
7.1	Manual Color Bar Locate.....	106
	Color Bar Setup Section	107
	Color Bar Images Section.....	108
	Manual Color Search Section	109
7.2	Locate Fixture Center.....	112
7.3	System Tests	115
	Run Basic System Tests.....	115
	Troubleshoot Servo System Test.....	118
	Troubleshoot a Camera System Test	122
	Troubleshoot a Measurement System Test	123
	Troubleshoot Camera Images	124
7.4	Head Target Alignment.....	126
7.5	Web Watch.....	129
	Web Watch Control	131
	Web Watch Results	135
	Plot Displays.....	137
7.6	Color Compliance Check.....	138
	Revision History	143

Warnings



WARNING: Warning labels as shown at left indicate the hazard zones on the equipment. **DO NOT** place hands or clothing near any moving machinery at any time.

WARNING: Each scan head travels on three V-rollers mounted to the V-rail. Hands or fingers could be injured at these points. **DO NOT** place hands or clothing where they can become entangled with the V-rails or V-rollers.

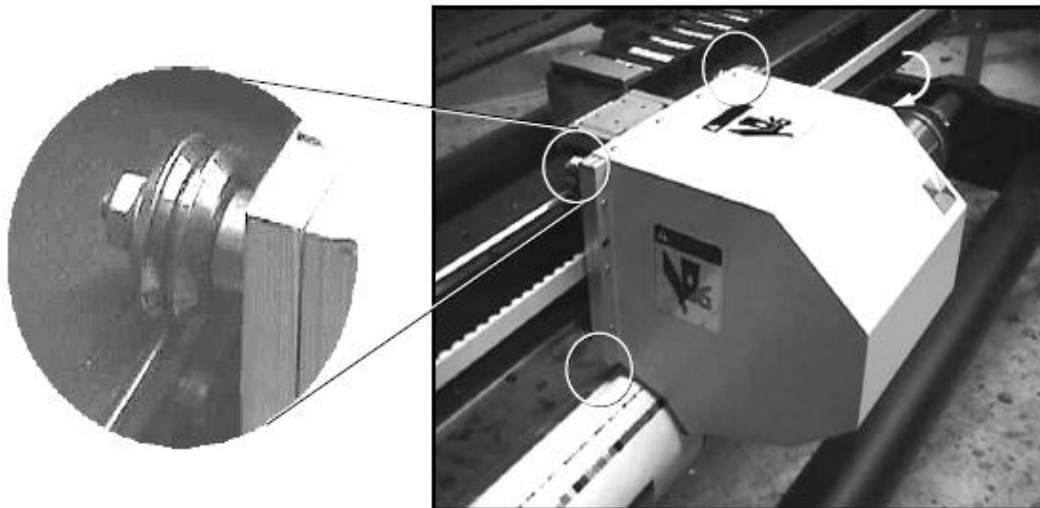


Figure 1: V-Rail and V-Roller Hazard Areas (two on top, one on bottom)

WARNING: While On-Press has power, scan heads may move at any time.

WARNING: Scan heads may move at any time	
ATTENTION: La Tete peut bouger à tout moment	
PRECAUCIÓN: La caja exploradora se mueve periodicamente	
WARNUNG: Me einhelt kann jederzeit in Bewegung geraten	

WARNING: Opening the enclosure door turns off power to the On-Press unit. The terminal block and 24V power supply in On-Press enclosure have live AC power when enclosure door is open and the On-Press is switched off.

CAUTION:	Opening door turns power off
ATTENTION:	L'ouverture des portes coupe l'alimentation
CUIDADO:	Al abrir la puerta el sistema se apagará
ACHTUNG:	Automatische Stromabschaltung bei geöffneter Tür

WARNING: Installation by an AVT-trained specialist only.

WARNING: Rollers on the Clarios On-Press move at high speed. Hands or fingers could be injured by the force of the rollers. **DO NOT** place hands or clothing where they can become entangled with the rollers. **DO NOT** place hands or clothing in path of the moving scan heads.

WARNING: Not to be put into service until equipment which incorporates Clarios is safe for use.

ATTENTION: The attention of the specifier, purchaser, installer, or user is drawn to special measures and limitations to use which must be observed when the product is taken into service, to maintain compliance with the directives indicated in the EU Declaration of Conformity. Details of these special methods and limitations are available on request, and are also contained in the product manuals and installation procedures. Moreover, this equipment must not be put into service until the machinery into which it is incorporated has been declared in conformity with the provision of all other relevant EU directives.

Servicing the Clarios System



Most AVT components contain no serviceable parts and may present an electrical hazard, as indicated by this label.

Customer Service can assist you if system components need to be exchanged for a loaner or replaced.

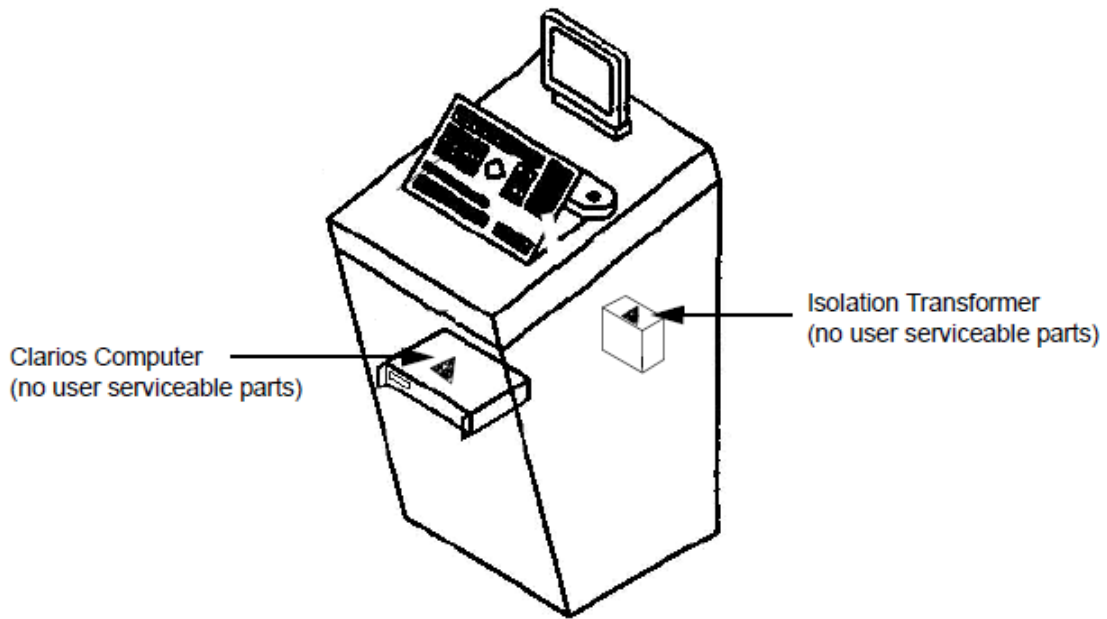


Figure 2: Warning Labels on Clarios Workstation Console

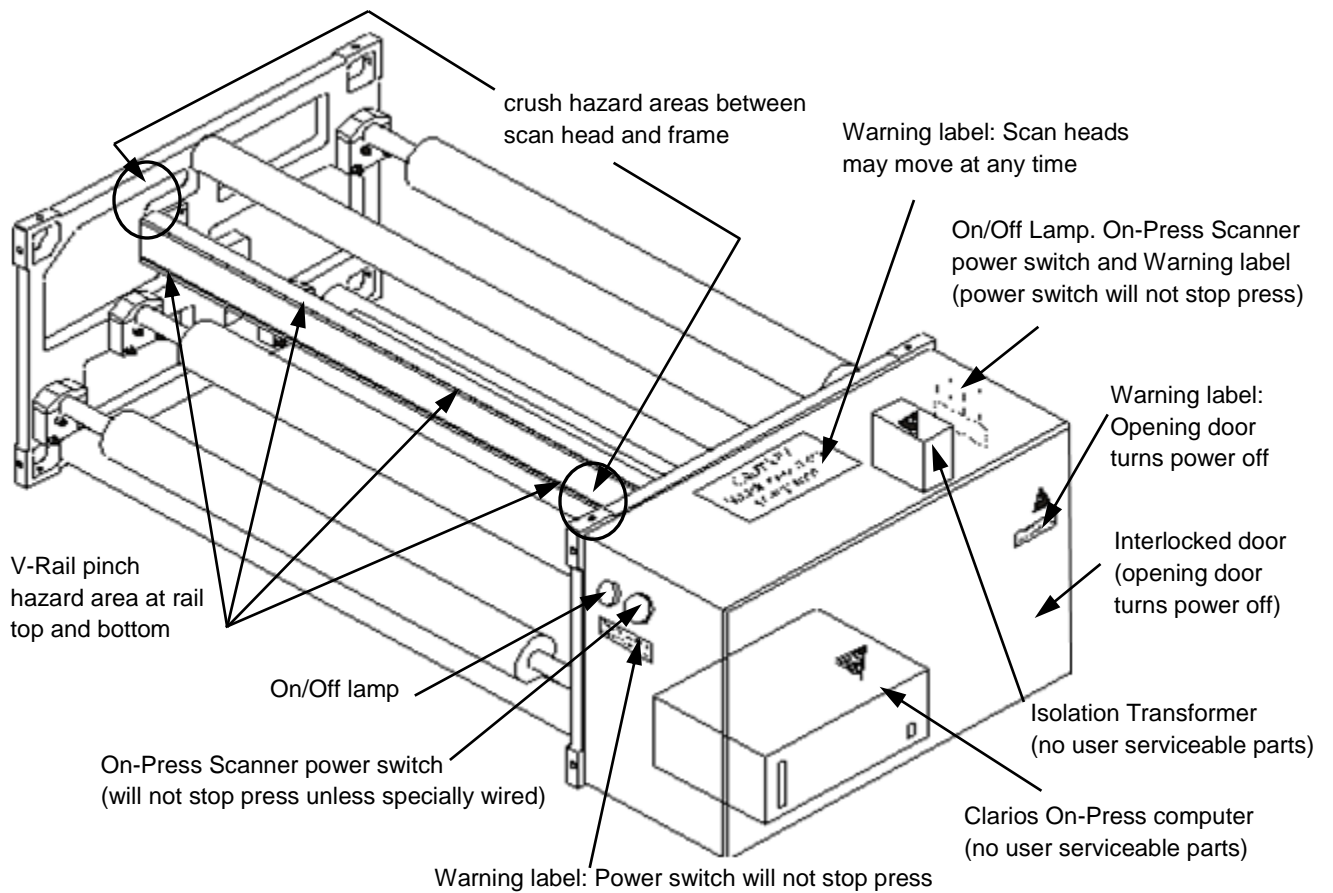


Figure 3: On-Press Warning Labels and Hazard Area

1 Introduction

This manual is for use with Advanced Vision Technology's Clarios system, an on-web color measurement system.

Typographic Conventions

To make this manual easier to follow, bold letters are used to show touch-control buttons, icons, or view names, such as **OK**, **Apply**, or **Press Status**.

Note: Notes contain specific information. They may explain why a certain step should be performed. Sometimes they contain tips about a particular step in a process.

Helpful Hint

Helpful Hints appear at the end of sections. They contain tips on how to use the Clarios system more effectively.

WARNING: Warnings appear when specific instructions must be followed to avoid creating a problem.

2 System Overview

This section describes the Clarios system components, how the system operates, and how to power on and turn off the Clarios server application, workstation, and monitor.

2.1 Clarios System Description

The On-Press scanners measure the density of points in the color bar for each form running on the press. The measurements are sent from the On-Press computer to the Clarios server application. The Clarios server application compares the density readings to the target densities and sends density changes to bring color to the targets. The results appear on the Clarios workstation monitor.

After the press has had a chance to settle with the new ink levels, the On-Press scanners restart the process by scanning the color bar again. Since each form can be different, the Clarios system needs information about the form and its color bar. This information is received by the Clarios workstation via the Clarios server application.

For more information on operating the Clarios system, see the *Clarios Training & User's Guide* and the *Clarios Advanced User's Manual*.

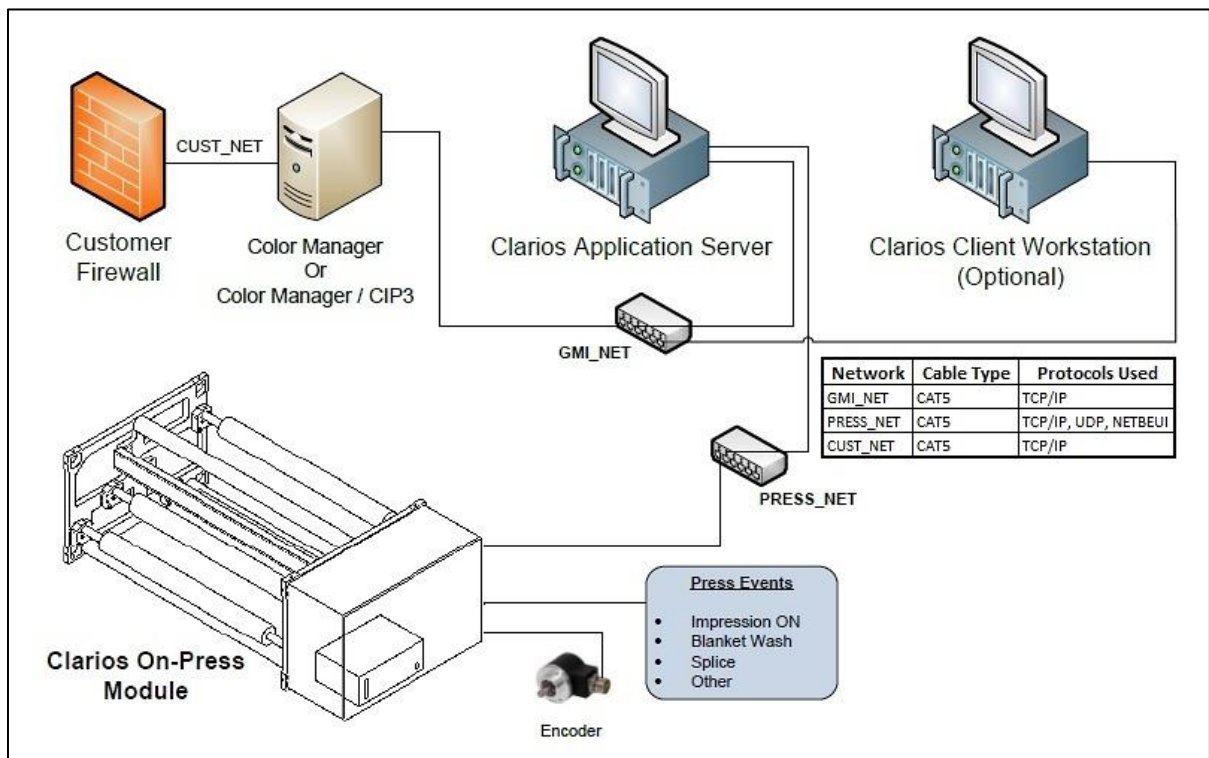


Figure 2.1: Clarios System Overview

2.2 Clarios System Components Overview

The system components include:

- **Clarios On-Press Scanner**

One to two scanners move across one or more webs to measure density and other elements in the color bar.

The On-Press scanner has two probe heads that produce real-time density, measurement, and other data. The scanner receives requests from the Clarios server application and, in turn, sends the real-time data back to the Clarios server application.

- **Clarios Server Computer and Application**

All job data is created by the operator with the aid of CIP3 presetting, if enabled, and sent to the Clarios server application (running on the Clarios server computer).

The Clarios server application captures the data and sends it to the Clarios workstation. The Clarios server application also receives runtime data from scans.

- **Clarios Workstation**

The Clarios workstation consists of a computer inside a console and a touchscreen monitor on top of the console.

The Clarios workstation receives system configuration, job, and runtime scan data from the Clarios server application. The Clarios workstation monitor displays scan results and job folders on a touch-controlled screen. The operator touches buttons and menus on the screen in the same way as they use a mouse or trackball.

- **Press Speed and Position Encoders**

The encoders mount on the press and provide the Clarios workstation with press speed and position information via the Clarios server application.

- **Press Event Sensors**

Sensors receive event signals from the press and transmit them to the Clarios workstation via the Clarios server application. Events such as a speed change, blanket wash, or web splice cause the On-Press Scanner to pause scanning until the event is cleared.

- **Color Manager**

Color Manager generates charts and reports based on the Clarios workstation scan data. Clarios scan data is archived on this computer.

Clarios Workstation Computer

The Clarios workstation computer is located inside the Clarios workstation console.

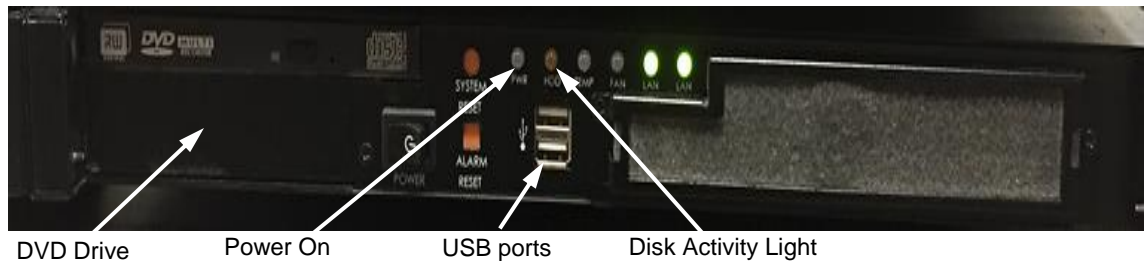


Figure 2.2: Clarios Workstation Computer (front view)

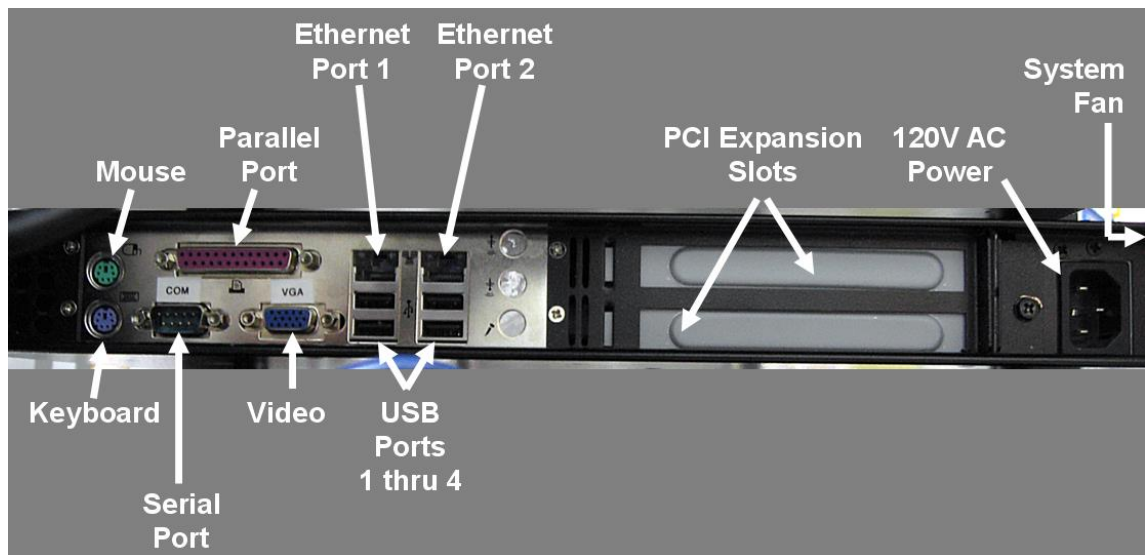


Figure 2.3: Clarios Workstation Computer (rear view)

This computer connects to the touchscreen monitor and the Clarios Ethernet network.

Note: All newer touchscreens are USB, not COM.

Connectors are available to attach to an external mouse or keyboard, or to a VGA monitor.

Clarios Server Computer

The Clarios Server computer is located in the server rack.

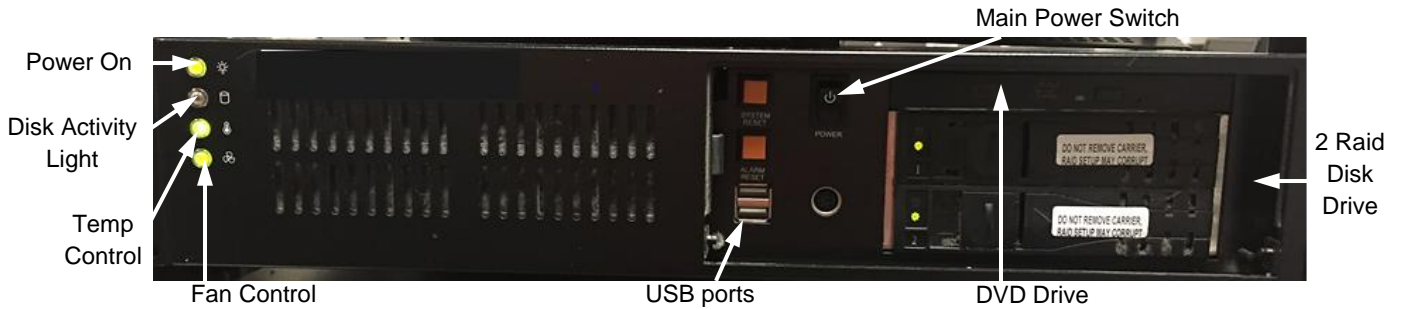


Figure 2.4: Clarios Server Computer (front view)

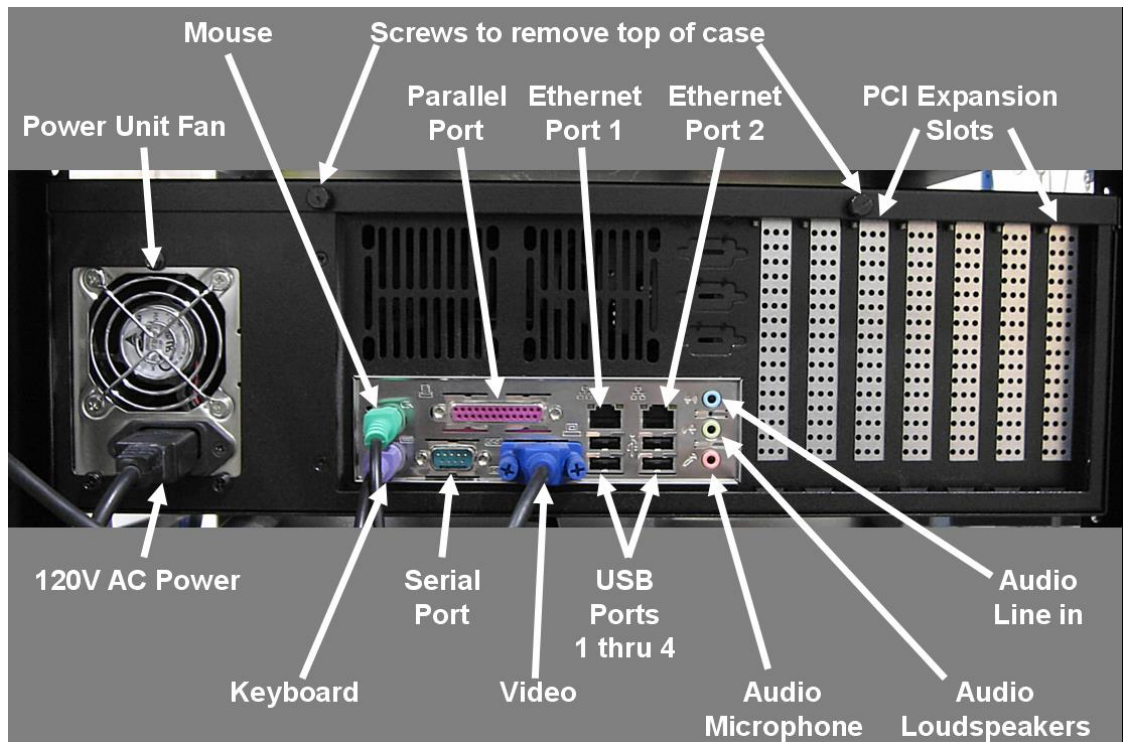


Figure 2.5: Clarios Server Computer (rear view)

This computer connects to the press, the on-press units, the internal data network for processing, and to VPN for remote support.

On-Press Computer

The On-Press computer is located in the On-Press unit. It is connected to the Clarios NetBEUI / Ethernet network, the probe heads, the Press Events Signals PLC board, and the servo amplifier board.

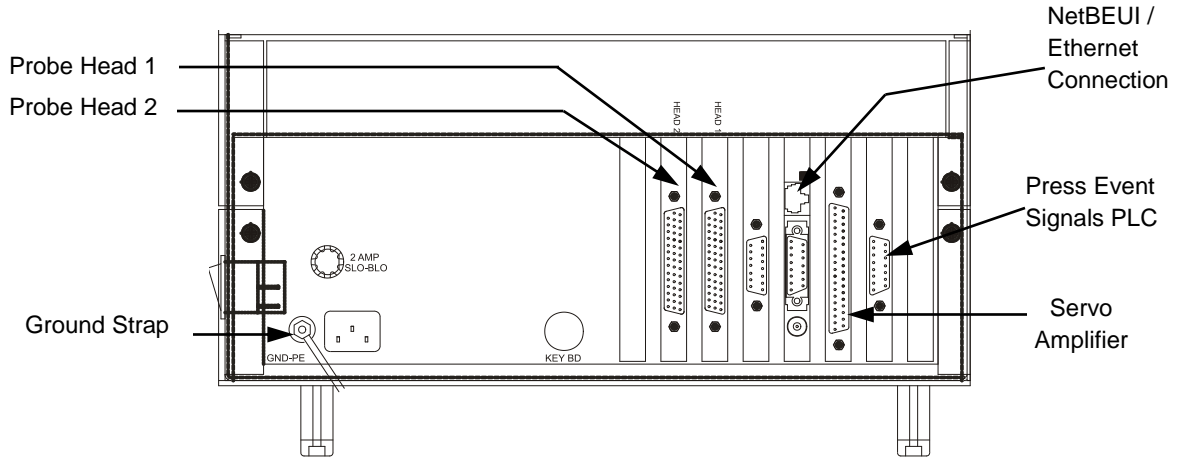


Figure 2.6: On-Press Computer (rear view)

Color Manager Computer

The Color Manager computer connects to a monitor, keyboard, mouse, and printer. It is connected to the Clarios network and to your Ethernet network.

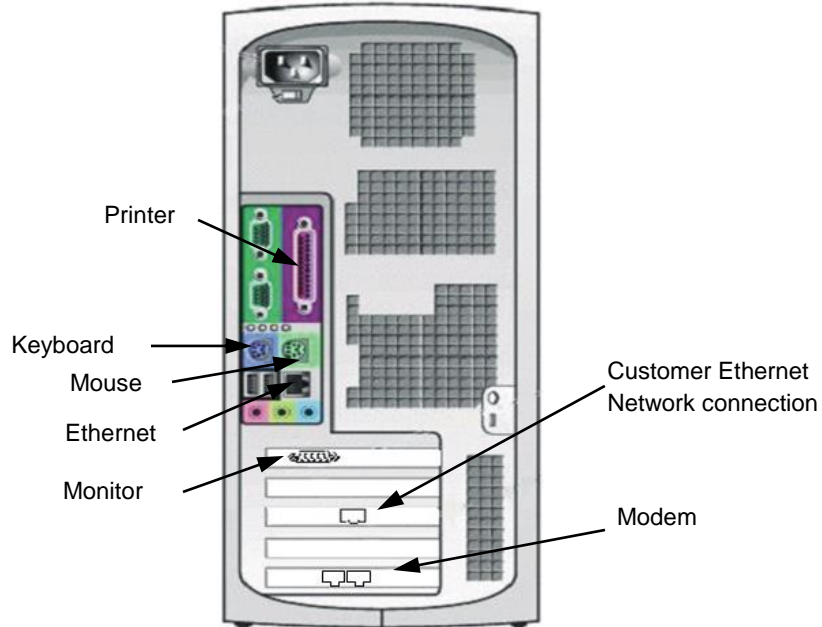








Figure 2.7: Color Manager Computer (rear view)

Network Connections

For information about network connections, see the *Ethernet Installation Guide*, P/N 090S900074.

2.3 Powering On the Clarios System

To turn on the Clarios system, follow these steps.

1	Power on the On-Press module. (See On-Press Computer and On-Press Power for more information about the On-Press.)				
2	Power on the press console. (See the OEM or AVT <i>Operator Console Unit (OCU3) User's Manual</i> for more information.)				
3	<p>Turn on the Clarios workstation computer, by pressing the power switch on the front of the Clarios workstation computer.</p> <p>Note: You must first turn on the Clarios workstation monitor by pressing the power button located on the side or front, depending on the type of monitor.</p> <div data-bbox="407 787 1406 989" data-label="Image"> </div> <p style="text-align: center;">Figure 2.8: Clarios Workstation Computer (front)</p> <p>The Clarios server and workstation applications will start automatically.</p> <table border="1" data-bbox="407 1125 1414 1436"> <tr> <td data-bbox="407 1125 594 1297">  </td> <td data-bbox="594 1125 1414 1297"> <p>If the server application does not start, double-touch the Clarios AppServer icon to start the server. If you need to reset the Clarios server computer, see the steps for Reset Clarios Server Computer.</p> </td> </tr> <tr> <td data-bbox="407 1297 594 1436">  </td> <td data-bbox="594 1297 1414 1436"> <p>If the workstation application does not start, double-touch the Clarios Client icon to start the workstation.</p> </td> </tr> </table>		<p>If the server application does not start, double-touch the Clarios AppServer icon to start the server. If you need to reset the Clarios server computer, see the steps for Reset Clarios Server Computer.</p>		<p>If the workstation application does not start, double-touch the Clarios Client icon to start the workstation.</p>
	<p>If the server application does not start, double-touch the Clarios AppServer icon to start the server. If you need to reset the Clarios server computer, see the steps for Reset Clarios Server Computer.</p>				
	<p>If the workstation application does not start, double-touch the Clarios Client icon to start the workstation.</p>				

- 4 While the program loads, the “Connecting to Server” and “Loading System Configuration” messages display on the Clarios workstation monitor, as shown in Figure 2.9 below.

These messages should clear in 30-60 seconds.

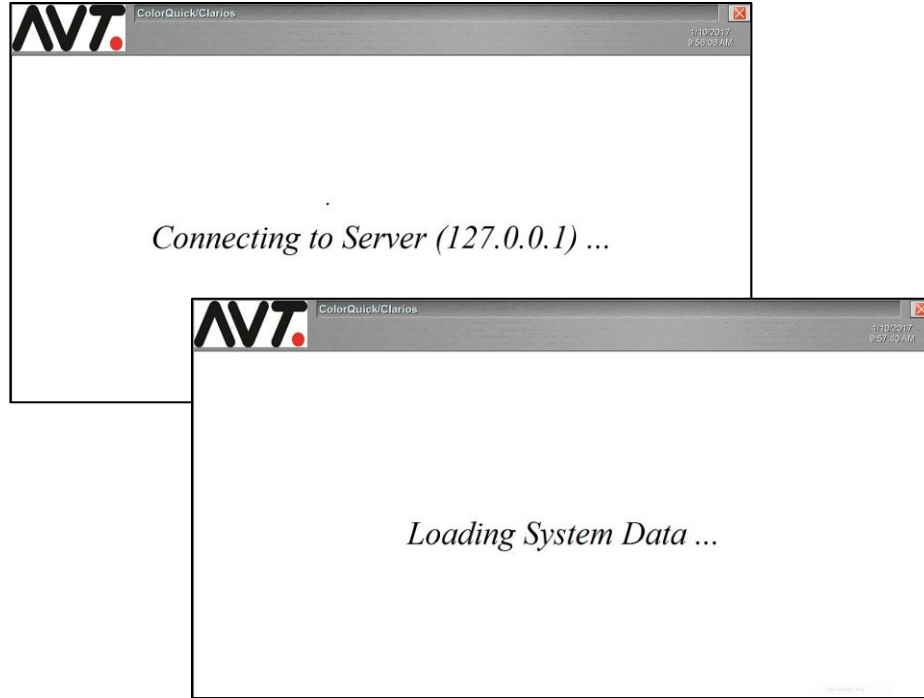


Figure 2.9: Connecting to Server and Loading System Data Messages

- 5 After the system and job data have been received, the Press Status view should display with the press units and green camera icons on the Clarios workstation computer.

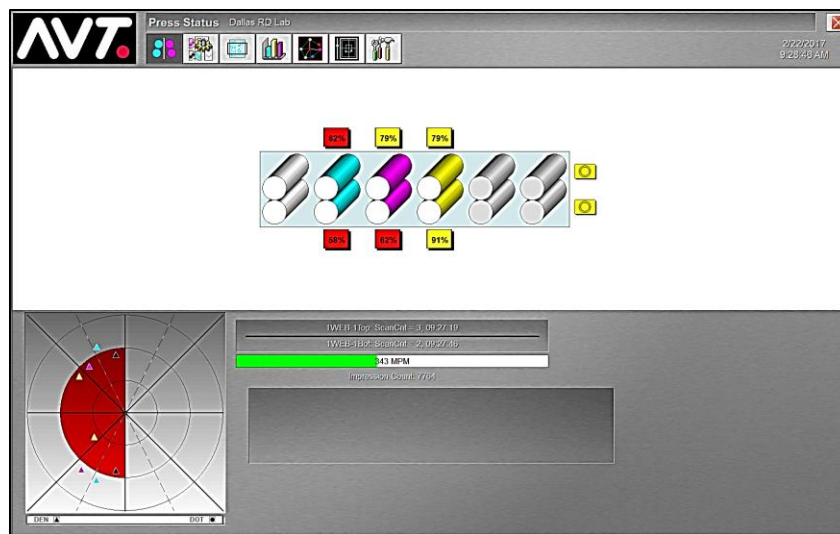
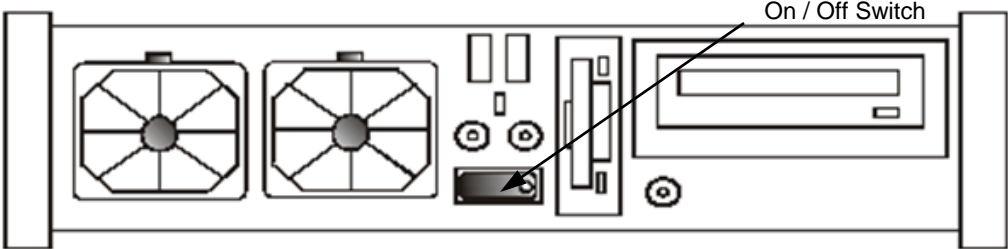


Figure 2.10: Press Status View on Clarios Workstation

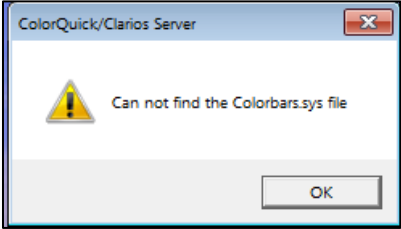
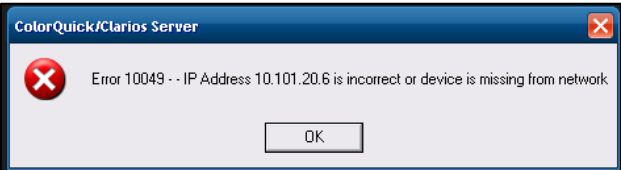
Reset Clarios Server Computer

WARNING: The Clarios Server computer running the Clarios server application should always remain on. Turning it off will disable all OPs and Clarios workstation computers. If a reset is required, follow steps 1-6 below.

1	End the Clarios server application.
2	Delete the activejob.xml or jobqueue.xml file in the C:\GM\ICQ directory.
3	Shut down Windows.
4	Restart the Clarios server application by toggling the On/Off power switch on the front of the Clarios server computer to the On position.
 <p>Figure 2.11: Clarios Server Computer (front)</p>	
5	Verify that the Clarios server application has started. If not, start it using the Clarios Client desktop icon.
6	Wait for the system to reconnect to the OEM, Clarios workstation computer(s), and OPs. This may take up to 10 minutes.

Messages during Clarios Startup

The following error messages may appear during Clarios startup.

<p>If you have a missing or invalid system XML file.</p> <p>Note: This has nothing to do with missing colorbars; the XML file is faulty.</p>	
<p>If your Mercury OEM press console is not connecting.</p>	

2.4 Exiting Clarios and Turning Off Clarios Workstation Computer

Before turning off the Clarios workstation computer, the Clarios workstation application *must* be closed.

Exit the Clarios Workstation Application

To close the Clarios workstation application, touch the **Exit** button located at the top of all views.



Figure 2.12: Main Toolbar - Exit button

WARNING: Before turning off the Clarios workstation computer, the Clarios application *must* be closed.

WARNING: Turning off the computer while the application is still running may damage the system or form data.

Shut Down Clarios Workstation Computer Using Windows

1	Touch the Start button on the Quick Launch toolbar and then touch the Shut Down button on the drop-down menu. The Shut Down Windows dialog displays.
A screenshot showing the Windows XP Start menu on the left and the 'Shut Down Windows' dialog box on the right. The Start menu is open, showing options like Programs, Documents, Settings, Search, Help and Support, Run..., and Shut Down... at the bottom. An arrow points from the 'Shut Down...' option to the 'Shut Down' dialog box. The dialog box has a title bar 'Shut Down Windows' and a Microsoft logo. It asks 'What do you want the computer to do?' with a dropdown menu set to 'Shut down'. Below the dropdown, it says 'Ends your session and shuts down Windows so that you can safely turn off power.' There are 'OK', 'Cancel', and 'Help' buttons at the bottom.	
Figure 2.13: Shut Down Sequence	
Note: You can use Clarios on Server 2000, Server 2003, WinXP, and Win7.	
2	Make sure drop-down menu displays Shut down and then touch OK button.

2.5 On-Press Power

Power to the On-Press unit is controlled by a yellow mushroom switch on the outside of the enclosure.

WARNING: Power must be turned off using the enclosure power switch before opening the enclosure door. Failure to do this may harm the On-Press computer. There may still be power inside the OP enclosure, even after pushing the mushroom switch.

The enclosure door must be securely fastened before turning on the power again using the mushroom switch. The enclosure door also has a power switch. But using the door to turn the power on and off can cause problems for the On-Press computer. If it takes more than one attempt to fasten the door, that causes the power to cycle on and off quickly, harming the computer

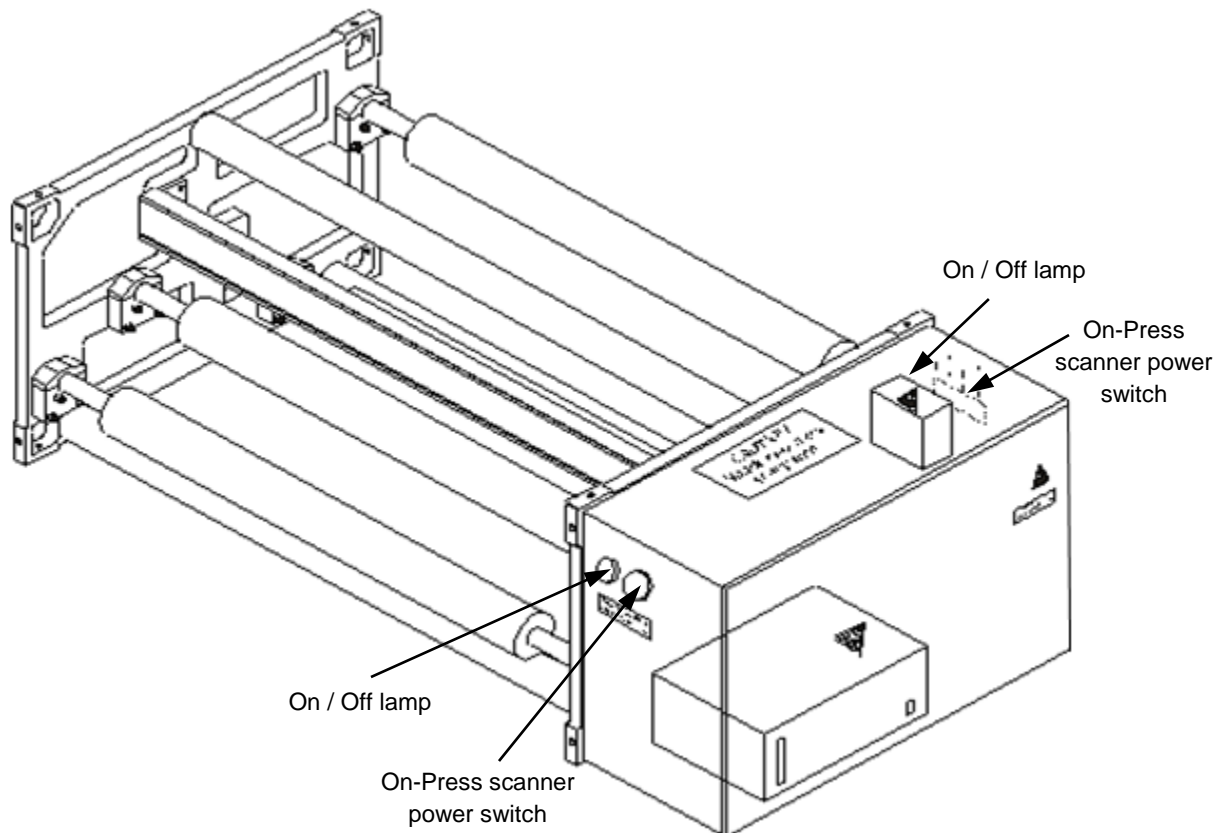


Figure 2.14: On-Press Power



You can manually reset the On-Press from the Clarios server application. Touch the **Reboot** icon on the desktop to reboot the On-Press computer.

Note: You can also reboot the On-Press computer from a selection on the Start menu.

3 Customizing the System

During installation, the Clarios system is set up to work with the press it is installed on. The **Display Options** and **User Selections** on the **Utilities - Configuration** view contain the specifications that are used to customize the system.

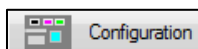
This section explains these selections and how to set up job preferences.

Note: Changes to shop procedures may require changes to Clarios site configuration.

3.1 Utilities View – Configuration



Touch the **Utilities** View Selector button on the main toolbar to display the **Utilities - Configuration** view. This is the default Clarios **Utilities** view.



Located on this view are three **Display Options**, ten **User Selections**, and **Message Filtering** options.

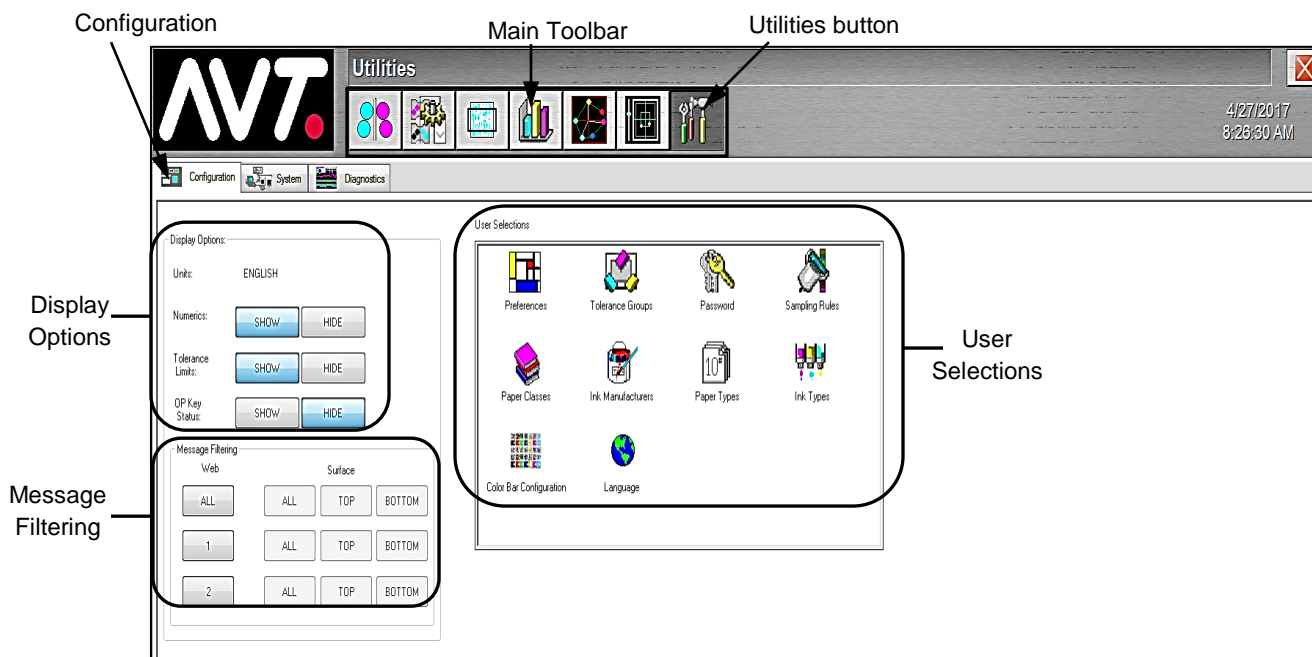


Figure 3.1: Utilities View - Configuration

3.2 Display Options

The Display Options buttons control how the **Web Data** views - **Delta Density**, **Scan Data**, and **Tone Value** - present data.

Display options are set for units, numerics, tolerance limits, the OP key status, and optional Message Filtering options for Auto Transfer.

Display Options:

Units: ENGLISH

Numerics:

Tolerance Limits:

OP Key Status:

Message Filtering

Web	Surface		
<input type="button" value="ALL"/>	<input type="button" value="ALL"/>	<input type="button" value="TOP"/>	<input type="button" value="BOTTOM"/>
<input type="button" value="1"/>	<input type="button" value="ALL"/>	<input type="button" value="TOP"/>	<input type="button" value="BOTTOM"/>
<input type="button" value="2"/>	<input type="button" value="ALL"/>	<input type="button" value="TOP"/>	<input type="button" value="BOTTOM"/>

Figure 3.2: Display Options

Units

Indicates the display unit is in **English**.

Numerics

Select to **Show** or **Hide** numerics. Actual and target values are shown next to the individual ink keys. A green line shows the target value relative to the actual value.

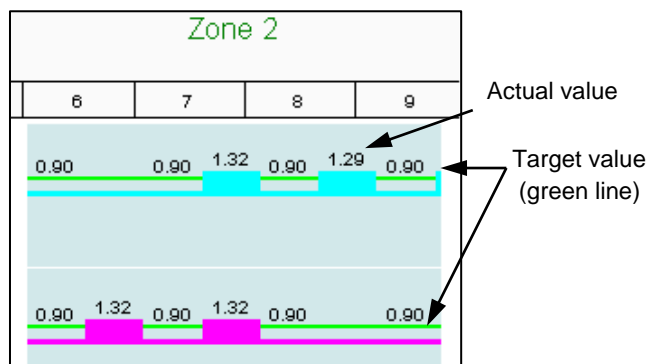


Figure 3.3: Show Numerics Option

Tolerance Limits

Select to **Show** or **Hide** tolerance limits, which are shown as dotted gray lines.

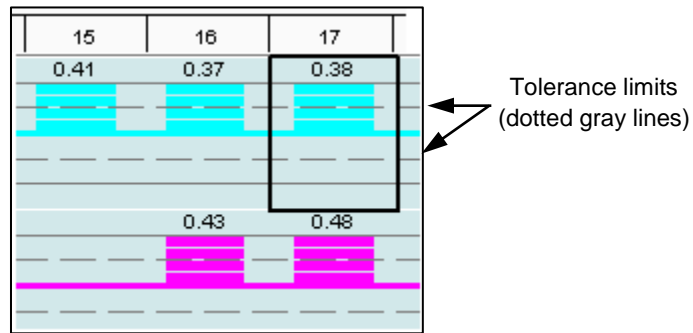


Figure 3.4: Show Tolerance Limits Option

OP Key Status

Select **Show** to display all the measurement status error X's. Select **Hide** to hide the measurement X's, if the key is controlled.

The Web Data Key views show the status of the key in various ways depending on the **OP Key Status** selection and the measurement status. To determine the status, use the following chart to find an example of the key status you're seeing and move across the chart to find the various conditions that exist.

Web Data View				Measure Status	Control Status (Interpolation)	Press Status	Swatch Information Dialog		
Delta (HIDE)	Delta (SHOW)	Density (HIDE)	Density (SHOW)				Measure Status	Key Status (Closed Loop)	Key Status (Open Loop)
				Good (with delta)	<i>n/a</i>	Normal	Good	Controlled	Not Controlled
				Good (without delta)	<i>n/a</i>	Normal	Good	Controlled	Not Controlled
				Good	<i>n/a</i>	Locked	Good	Not Controlled (Locked)	Not Controlled
				Error	Good (with delta)	Normal	Error	Controlled	Not Controlled
				Error	Good (without delta)	Normal	Error	Controlled	Not Controlled
				Error	Good	Locked	Error	Not Controlled (Locked)	Not Controlled
				Error	Not Good	Normal	Error	Not Controlled	Not Controlled
				Error	Not Good	Locked	Error	Not Controlled (Locked)	Not Controlled

Figure 3.5: OP Key Status Chart

Message Filtering for Auto Transfer Feature (Optional)

The Message Filtering buttons control how operator GUI error messages are filtered for Auto Transfer.

By default, all webs and all surfaces are selected. Once you make a change to the message filtering configuration, the new configuration is stored in a file and reloaded when the Clarios workstation application is restarted.

Web Column	<ul style="list-style-type: none">• ALL – All webs• 1 – Web1• 2 – Web2
Surface Column	<ul style="list-style-type: none">• ALL – All surfaces• TOP – Top surface• BOTTOM – Bottom surface

- If **ALL** is selected under the Web column, all surface buttons in the same row will be enabled. All other web buttons will be unselected and the respective surface buttons will be disabled.
- If either **Web1** or **Web2** is selected under the Web column, then the ALL web button will be unselected and the respective surface buttons will be disabled.

3.3 User Selections

The **User Selections** icons allow the installer and/or user to set up all Clarios libraries. The installer/user can customize the default settings for new forms, so that the computer automatically fills in the most commonly used settings.

The following list of user selections are described in detail in the following sections of this chapter.

<u>User Selections</u>	<u>Description</u>
Password	Controls who can use advanced Clarios options.
Preferences	Set preferences for defaults.
Tolerance Groups	Set up density control limits and process limits.
Sampling Rules	Set up number of samples for templates and scans.
Paper Classes	Set up to five paper classes.
Ink Manufacturers	Identify ink manufacturers.

<u>User Selections</u>	<u>Description</u>
Paper Types	Identify the available paper types used for printing.
Ink Types	Setup standard ink names for process colors, black, and special colors.
Color Bar Configuration	Configure color bars.
Language	Specify language.

Note:

- For all **User Selections**, touch **Cancel** to cancel any changes you made to the default settings. (Cancel means the “last” selections are retained, not the “default” settings).

Password Protected

To access the **User Selections** described in this chapter, a password must be entered. This password is set during system configuration.

1 To access the User Selections, double-touch an **icon** and the Password dialog displays.

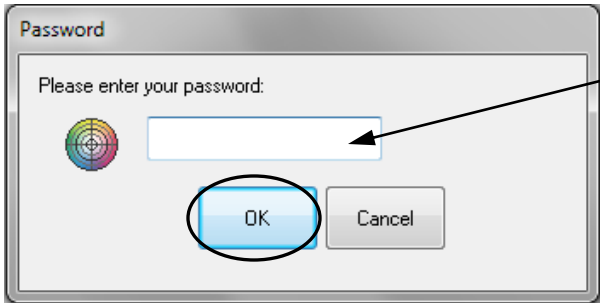
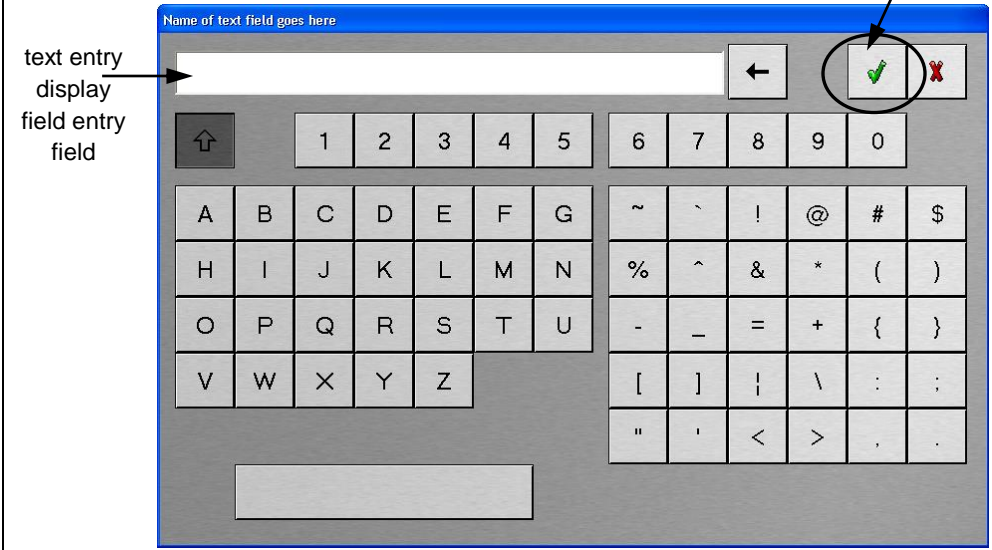


Figure 3.6: Password Dialog

<p>2</p>	<p>To enter the password, touch anywhere in the password entry field. The alphanumeric keypad displays.</p>  <p>text entry display field entry field</p> <p>OK button</p>
<p style="text-align: center;">Figure 3.7: Alphanumeric Keypad</p>	
<p>3</p>	<p>Using the keypad, enter the password by touching the keys and the password displays in the text entry display field.</p>
<p>4</p>	<p>Touch the OK button (✓) to close the keypad. The password displays as asterisks in the password entry field.</p>
<p>5</p>	<p>Touch OK to enter the password and close the Password dialog.</p>

Access is now allowed to the **User Selections**.

3.4 Passwords



Up to three levels of passwords are allowed for active system options indicated in the figure below. Each level may use a different password.

Double-touch the **Password** icon to open the Passwords dialog.

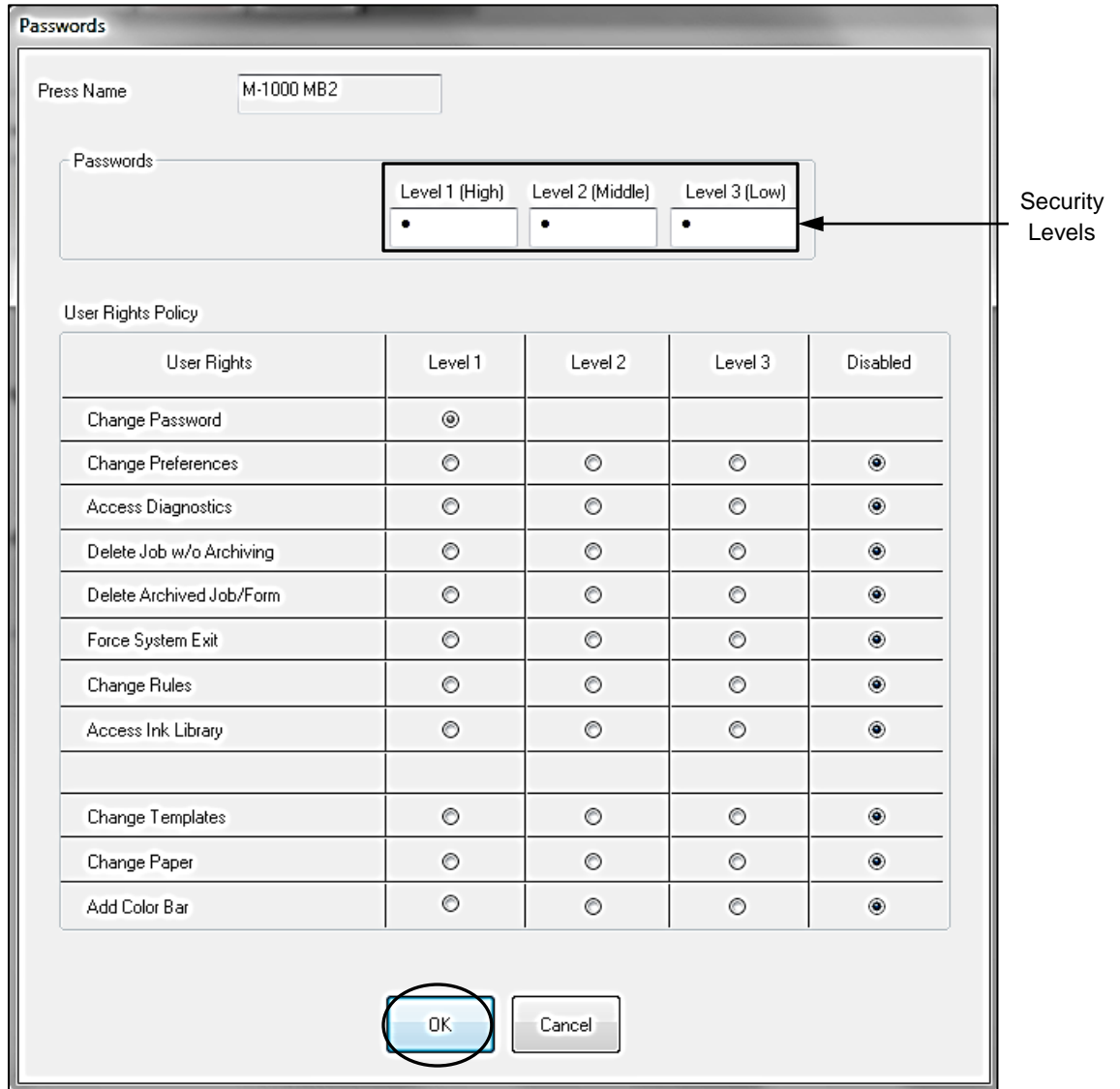
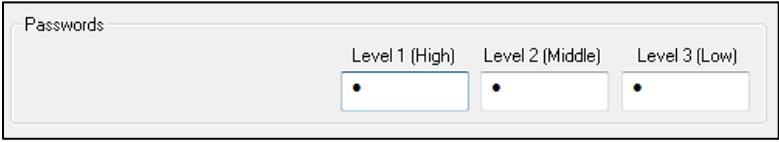
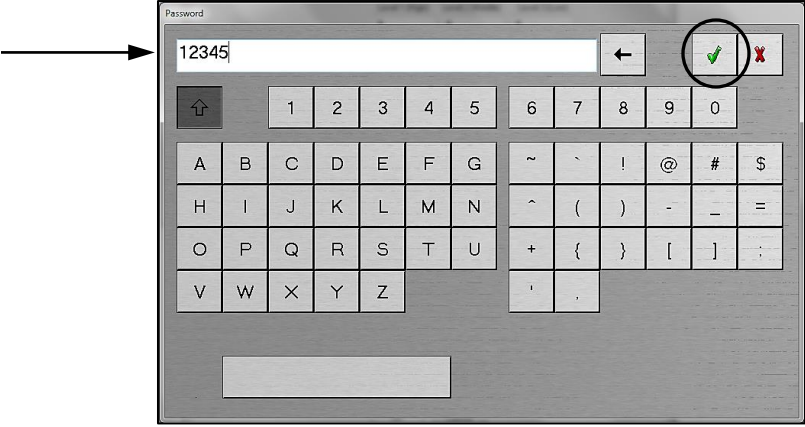



Figure 3.8: Passwords Dialog Box

Note: Every password option can be **disabled**, meaning no password is required.

Set Security Levels

1	<p>Touch Level 1 (High), Level 2 (Middle), or Level 3 (Low) fields.</p> 
2	<p>On the Password keypad, touch the keys to enter a password in the appropriate box (up to 8 characters).</p>  <p>The password displays in the text entry display field of the keypad.</p>
3	<p>Touch  and the keypad closes. The new password appears in the password entry field as a row of asterisks.</p>

Set User Policy Rights

1	<p>Set the User Rights Policy for each of the three levels for each of the active system options listed below:</p> <ul style="list-style-type: none"> ➤ Change Preferences: Customize the Clarios system. ➤ Access Diagnostics: Clarios maintenance and troubleshooting. ➤ Delete Job w/o Archiving: Specify if job can be deleted without archiving. ➤ Delete Archived Job/Form: Specify if archived job/form can be deleted. ➤ Force System Exit: Indicate if a forced system exit is allowed. ➤ Change Rules: Specify process/control limits to display scan results. ➤ Access Ink Library: Enter the ink names. ➤ Change Templates: Make a reusable template from a form. ➤ Change Paper: Indicate is paper change requires a password. ➤ Add Color Bar: For systems configured for the multiple color bar option, you can password-protect adding additional color bars.
2	<p>Touch OK to save the changes and close the dialog.</p>

3.5 Preferences

Note: This is installer configurable only.



You can specify default setting preferences for various parameters. Double-touch the **Preferences** icon to open the Preferences dialog.

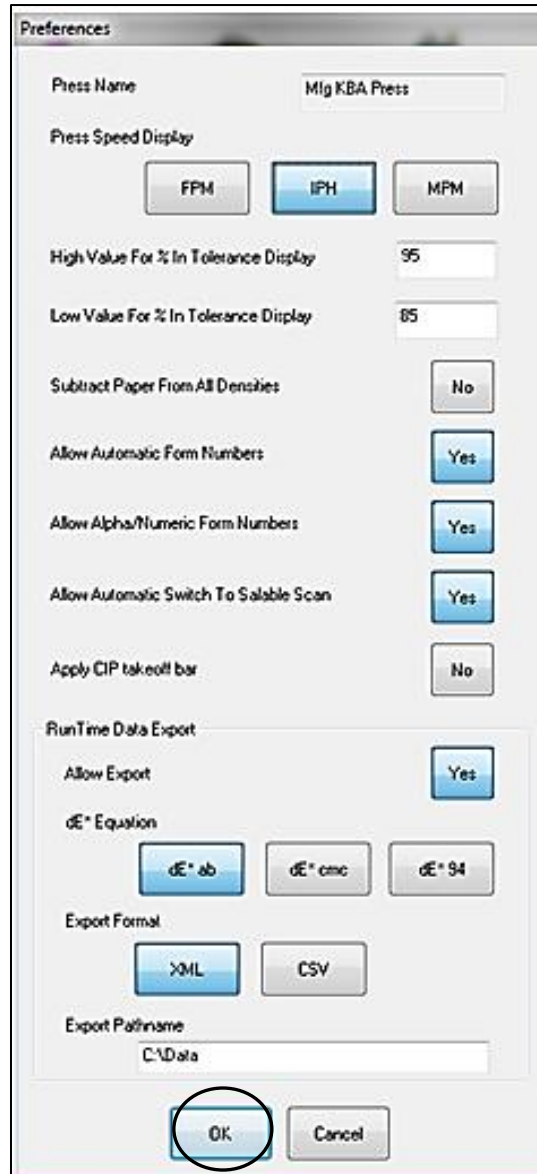


Figure 3.9: Preferences Dialog

To change the High or Low values, touch the **High** or **Low Value** field and, enter the new high or low value, and then touch

The new **High** or **Low Value** displays in its respective field.

Press Speed Display - FPM, IPH, MPM

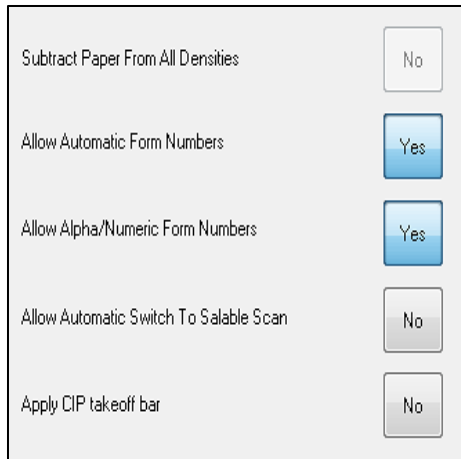
Set the Press Speed Display by touching feet per minute (**FPM**), impressions per hour (**IPH**) or meters per minute (**MPM**).

High and Low Value For % In Tolerance Display

These settings appear only if the system is configured for the Percent in Tolerance (PIT) option.

- **High** - Specify the upper value for a quality range for percentage of ink keys in tolerance. Percentages above this value cause the **PIT** button to display as green, indicating high quality. Percentages below this value, but above the **Low Value** cause the button to display as yellow, indicating a quality warning.
- **Low** - Specify the lower value for a quality range for percentage of ink keys in tolerance. Percentages below this value cause the **PIT** button to display as red, indicating a quality warning. Percentages above this value, but below the **High Value** cause the button to display as yellow.

If the low and high PIT values are both set to zero (0), this feature is disabled.



Subtract Paper From All Densities

Touch **Yes / No** toggle button to subtract/not subtract paper density from all densities calculated by Clarios.

Allow Automatic Form Numbers

Touch **Yes / No** toggle button. Clarios can automatically assign a form number if **Yes** selected.

Allow Alpha/Numeric Form Numbers

Touch **Yes / No** toggle button. Clarios can automatically assign an alphanumeric form number if **Yes** is selected.

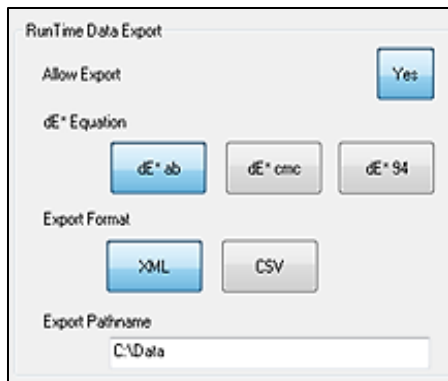
Allow Automatic Switch to Salable Scan

Touch **Yes / No** toggle button. Clarios can switch automatically to salable mode from makeready. This happens only when two consecutive history scans are within tolerance.

Apply CIP3 Takeoff Bar

Touch **Yes / No** toggle button. Values will be set to zero while applying preset values to form, if **Yes** selected. Once zero is applied for off-web keys, preset values for off-web keys cannot be reverted. This option only displays if CIP3 presetting feature is enabled.

Runtime Data Export



Allow Exports

Indicates if export is allowed (**Yes / No**)

dE* Equation

Specify the color difference equation.

Export Format

Specify the export format (**XML** or **CSV**).

Export Pathname

Specify the export pathname.

To save the default setting preferences, touch **OK** and the Preferences dialog closes. Touch **Cancel** to cancel any changes you made to the default setting preferences.

3.6 Tolerance Groups

Note: This is installer configurable only.

The tolerance groups determine the density process and control limits for all forms. A tolerance group is assigned to each press unit. Fifteen tolerance groups may be added to the library.

Limits: Each group must specify a control limit and process limit between 0.00 and 3.00 for target densities. The control and process limits are symmetrical ranges (+ and -).

Note: The tolerance limits for Density Solid can have two meanings. If less than 1.00, they represent absolute density points (abs) from the target density. If greater or equal to 1.00, they represent a percentage (%) of the target density.



Double-touch the **Tolerance Groups** icon to open the Tolerance Group Setup dialog.

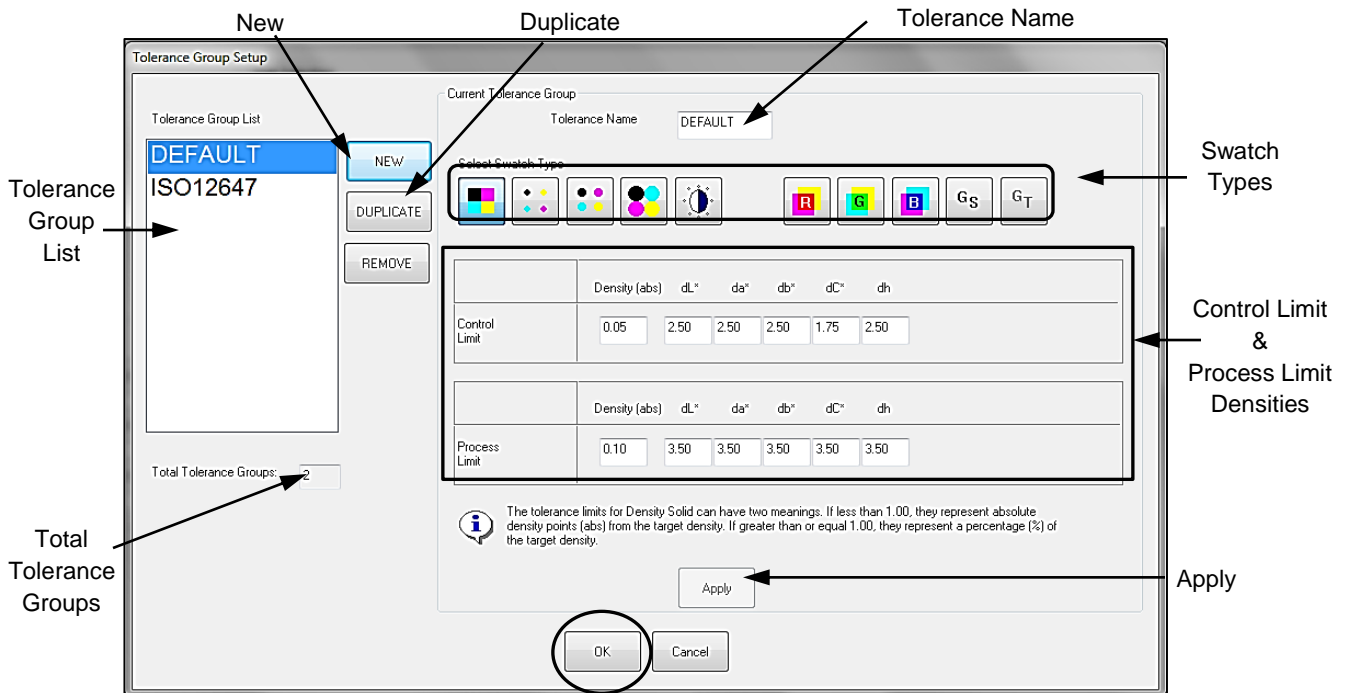
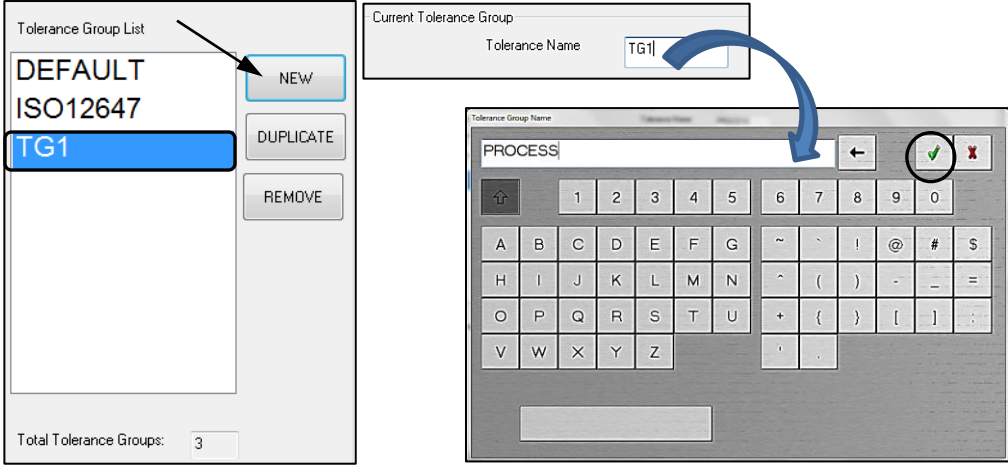




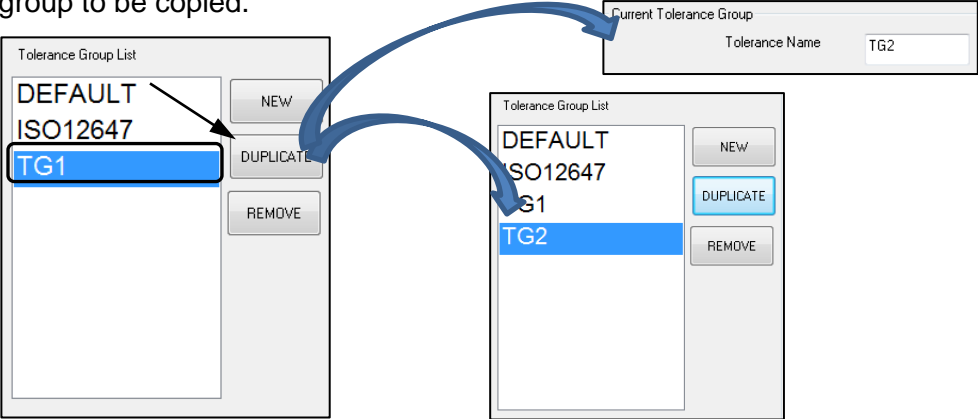
Figure 3.10: Tolerance Group Setup Dialog

Create a New Tolerance Group

<p>1</p>	<p>Touch the New button and TG1 displays in the Tolerance Group List and the Tolerance Name field. Total Tolerance Groups is increased by one.</p> 
<p>2</p>	<p>To name the new tolerance group, touch the Tolerance Name field displaying TG1 and the alphanumeric keypad displays.</p>
<p>3</p>	<p>Enter the new tolerance group name (up to 8 characters). The new name displays in the text entry display field of the keypad. Touch  and the new name displays in the Tolerance Name field and the keypad closes.</p>
<p>4</p>	<p>Select Swatch Type for the new tolerance group by touching any of the swatch buttons. The selected button displays as depressed.</p>
<p>5</p>	<p>Select Control and Process Limits for the selected swatch by touching each of the control or process limit fields in sequence:</p> <ul style="list-style-type: none"> ➤ Density (abs) ➤ dL* (lightness difference between a sample and target) ➤ da* (red-green difference between a sample and target) ➤ db* (blue-yellow difference between a sample and target) ➤ dC* (Chroma difference between a sample and target) ➤ dh* (hue angle difference between a sample and target, relative to 0°) ➤ dH* (metric hue difference between a sample and target, relative to two hues) <p>As each control or process limit field is touched, the numeric keypad displays. Enter the new value for control or process limit by touching the number keys. Touch  to close the keypad. The new process or control values display in their respective fields.</p>

6	<p>Touch the Apply button to apply all the attributes to the new tolerance group. The new name now displays in the Tolerance Group List.</p> <p>Note: If you select the OK button instead of Apply, the Tolerance Groups Message box displays “Do you want to save changes unapplied?”.</p>
7	<p>Touch OK to close the Tolerance Group Setup dialog.</p>

Duplicate a Tolerance Group

1	<p>At the Tolerance Group List, touch and highlight the name of the tolerance group to be copied.</p> 
2	<p>Touch the Duplicate button and TG2 displays in the Tolerance Group List and the Tolerance Name field.</p>
3	<p>Follow steps in Create a New Tolerance Group.</p>

Remove a Tolerance Group

1	<p>At the Tolerance Group List, touch and highlight the name of the tolerance group to be removed.</p>
2	<p>Touch the Remove button and the tolerance group name is deleted from the list and the number in the Total Tolerance Groups field is decreased by one.</p>
3	<p>Touch OK to close the Tolerance Group Setup dialog.</p>

3.7 Sampling Rules

Note: This is installer configurable only.

Sampling Rules control how frequently the scan results are saved as samples and how frequently the heads scan.

When Clarios is installed, the installer enters the press's makeready and running speeds. These speeds are labeled **Sample Level 1 FPM** and **Sample Level 2 FPM**. These speed levels appear in the Sampling Rules dialog automatically. The default values are 500 FPM and 1000 FPM.

Set the number of impressions between sample scans (at the Impressions Between Report Sample Prompt) when the press is running at makeready, and when in salable mode at slower than **Sample Level 1 FPM**, between **Sample Level 1 FPM** and **Sample Level 2 FPM**, and faster than **Sample Level 2 FPM**. Sample results are saved with the form.

Note: The maximum number of impressions between sample scans is 30,000.



Double-touch the **Sampling Rules** icon to open the Sampling Rules dialog.

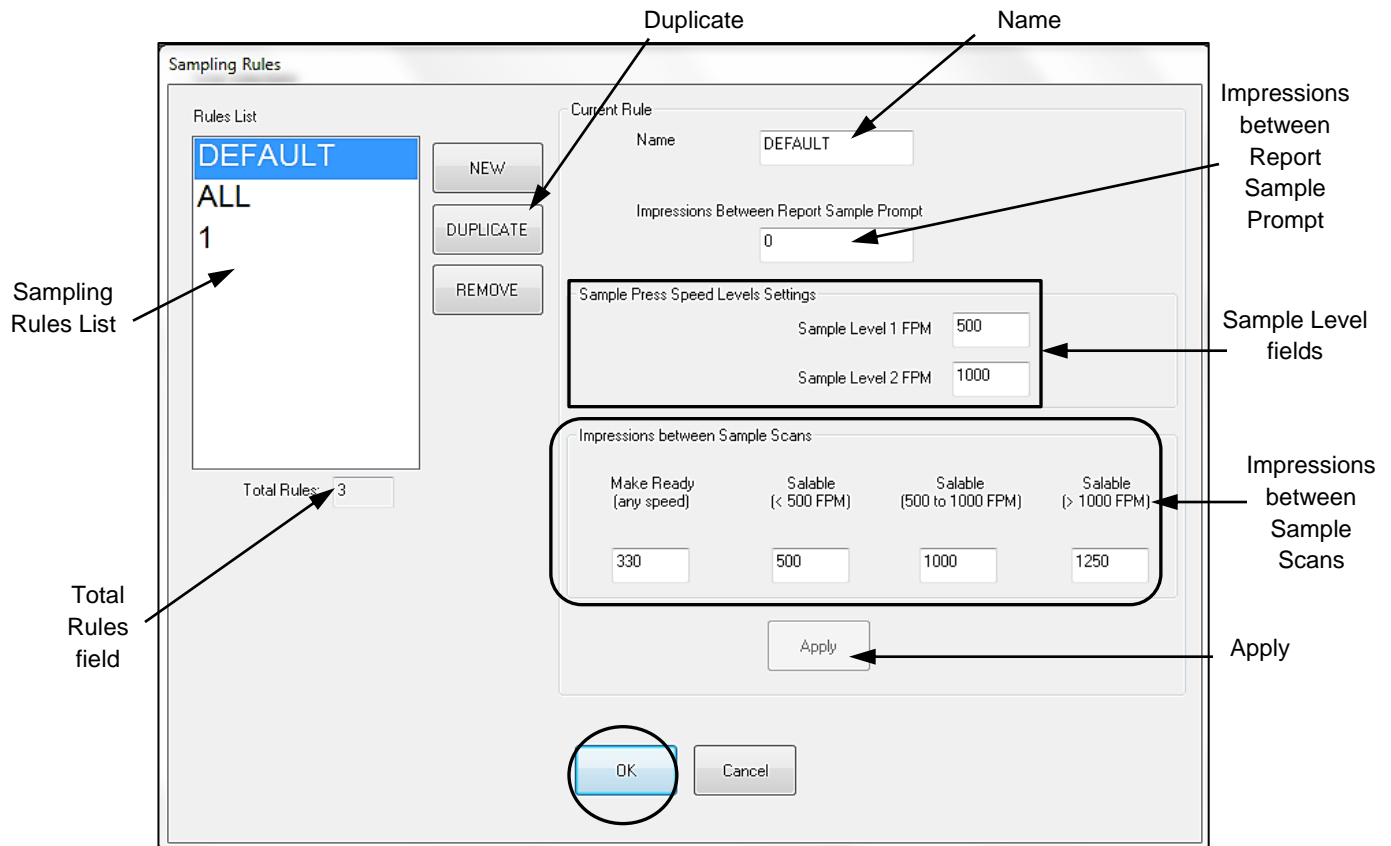
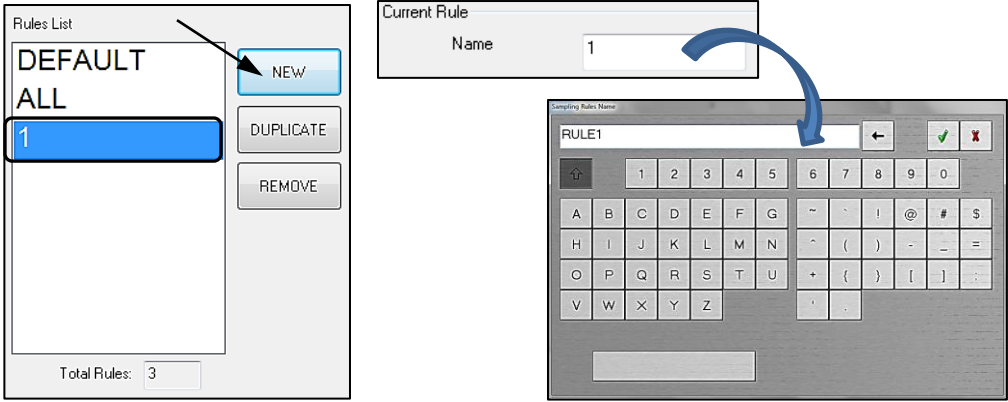



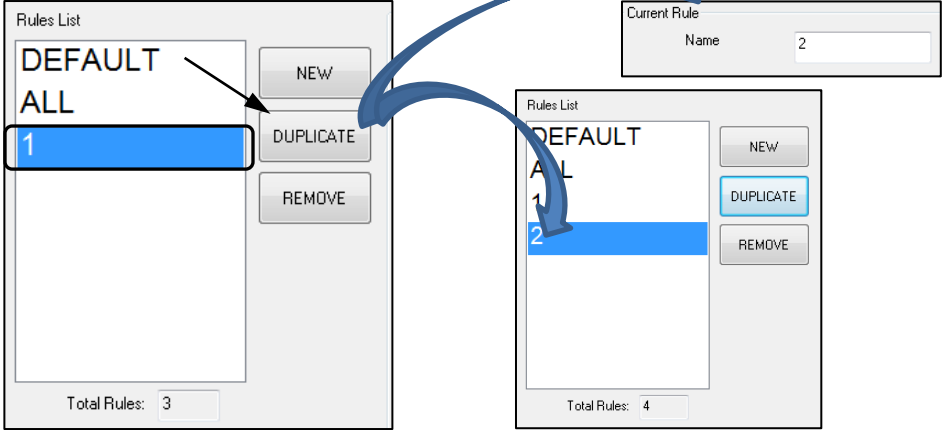


Figure 3.11: Sampling Rules Dialog Box

Create a New Sampling Rule

<p>1</p>	<p>Touch the New button and 1 displays in the Rules List and the Current Rule Name field. The number in the Total Rules field is increased by one.</p> 
<p>2</p>	<p>To name the new sampling rule, touch the Name field and enter the new sampling rule name (up to 8 characters) on the alphanumeric keypad. The name displays in the text entry data field of the keypad. Touch  and the new name displays in the Current Rule Name field and the keypad closes.</p>
<p>3</p>	<p>The Sample Press Speed Levels Settings fields are now activated and Sample Level 1 FPM and Sample Level 2 FPM may be set for the new sampling rule. Touch each field in turn, enter the new sample level, and then touch . The new sample level displays in its respective field.</p>
<p>4</p>	<p>Select the number of Impressions between Sample Scans for the new sampling rule by touching each of the following fields in turn:</p> <ul style="list-style-type: none"> ➤ Make Ready (any speed) ➤ Salable (< 500 FPM) ➤ Salable (500 to 1000 FPM) ➤ Salable (>1000 FPM) <p>Enter the new value by touching the number keys on the keypad and then touch  to close the keypad. The new value displays in its respective field.</p>
<p>5</p>	<p>Touch the Apply button to apply all changes to the new sampling rule.</p> <p>Note: If you select the OK button instead of Apply, the Sampling Rules message box displays “Do you want to save changes unapplied?”.</p>
<p>6</p>	<p>Touch OK to save the changes and close the Sampling Rules dialog.</p>

Duplicate a Sampling Rule

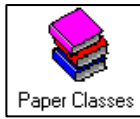
<p>1</p>	<p>At the Rules List, touch and highlight the name of the sampling rule to be copied.</p> 
<p>2</p>	<p>Touch the Duplicate button and 2 displays and is highlighted in Rules List.</p>
<p>3</p>	<p>Follow steps in Create a New Sampling Rule.</p>

Remove a Sampling Rule

<p>1</p>	<p>At the Rules List, touch and highlight the name of the sampling rule to be removed.</p>
<p>2</p>	<p>Touch the Remove button and the sampling rule name is deleted from the list and the number in the Total Tolerance Groups field is decreased by one.</p>
<p>3</p>	<p>Touch OK to close the Sampling Rules dialog.</p>

3.8 Paper Classes

Note: This is installer configurable only.



Double-touch the **Paper Classes** icon to open the Paper Classes dialog.

Five paper class names may be added to the library.

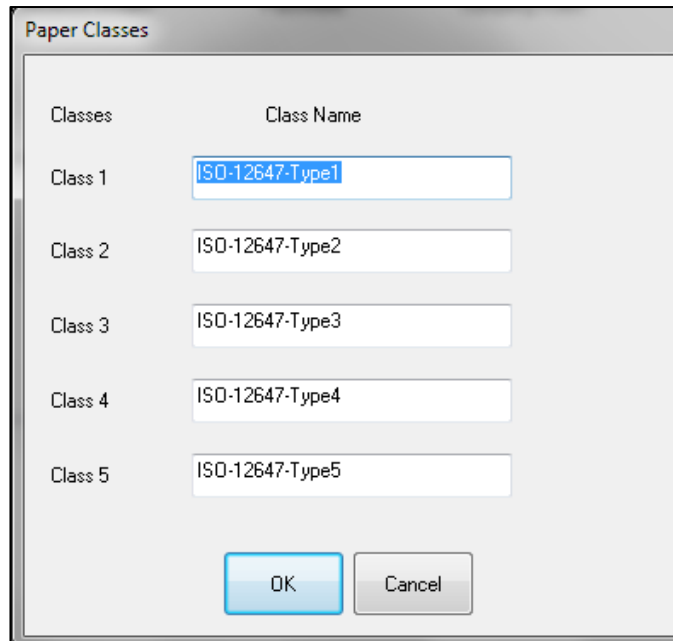



Figure 3.12: Paper Classes Dialog Box

Name Paper Classes

1	Touch any of the Class 1 through Class 5 fields and the alphanumeric keypad displays.
2	Enter the new name, touch  to close the keypad, and the new paper class name displays in its respective field.
3	Press OK to save and close the Paper Classes dialog.

3.9 Ink Manufacturers

Note: This is installer configurable only.



Double-touch the **Ink Manufacturers** icon to open the Ink Manufacturer dialog.

Five ink manufacturer names may be added to the library.

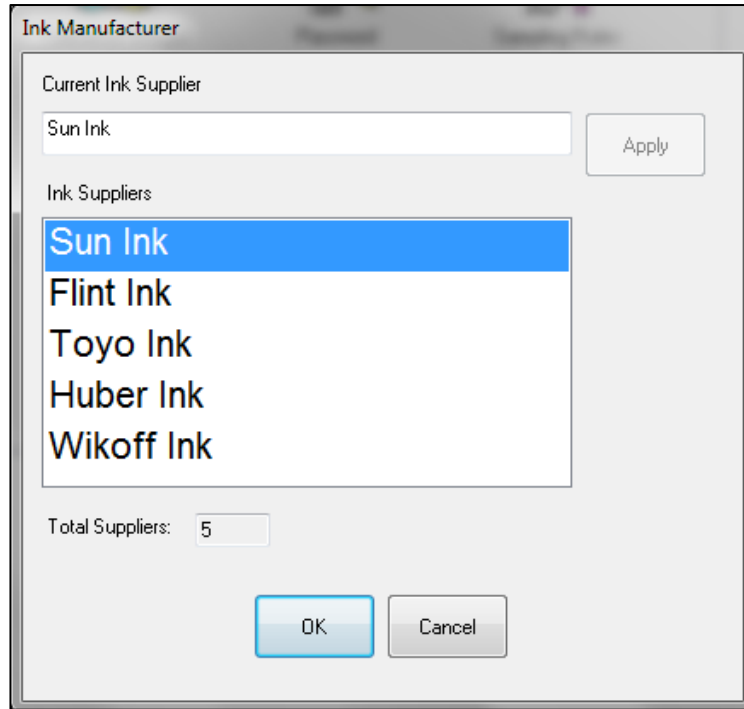



Figure 3.13: Ink Manufacturers Dialog

Name Ink Manufacturer

1	Touch a manufacturer in the Ink Suppliers list. The selected name displays in the Current Ink Supplier field.
2	Touch the field, enter the name for the manufacturer, and touch  to close the keypad.
3	The name displays in the Current Ink Supplier field and the Apply button is enabled.
4	Touch Apply to apply the changes and then OK to close the Ink Manufacturer dialog. Note: If you select the OK button instead of Apply , the Ink Manufacturers Message dialog displays “Do you want to save changes?”.

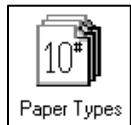
3.10 Paper Types

Note: This is installer configurable only.

Up to 20 paper types can be entered into the Paper Types library with information on classification, manufacturer, grade, and weight.

The first paper type in the list is used by the system as the default for all forms. When a new paper type becomes the default, all form templates are updated automatically. A different paper type can be selected for a form in the **Job Management** view, if necessary.

See the *Clarios Advanced User's Manual* for more information.



Double-touch the **Paper Types** icon to open the Types dialog.

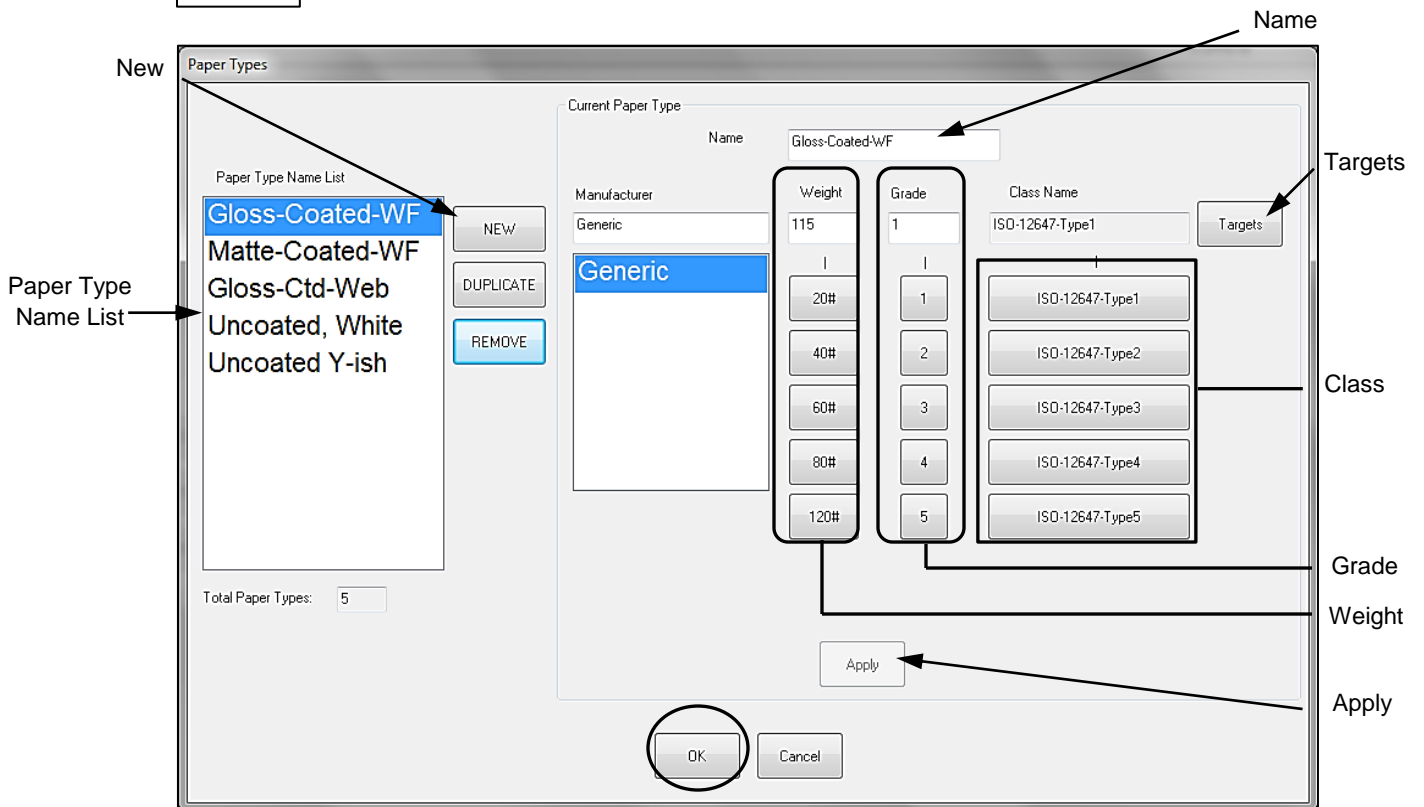



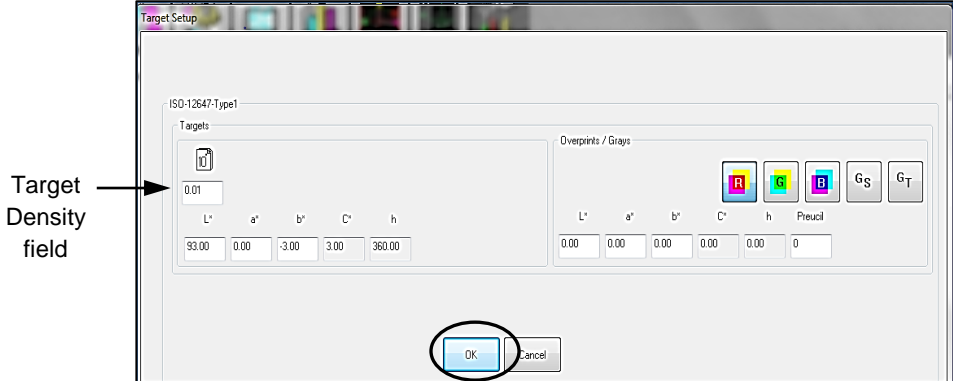



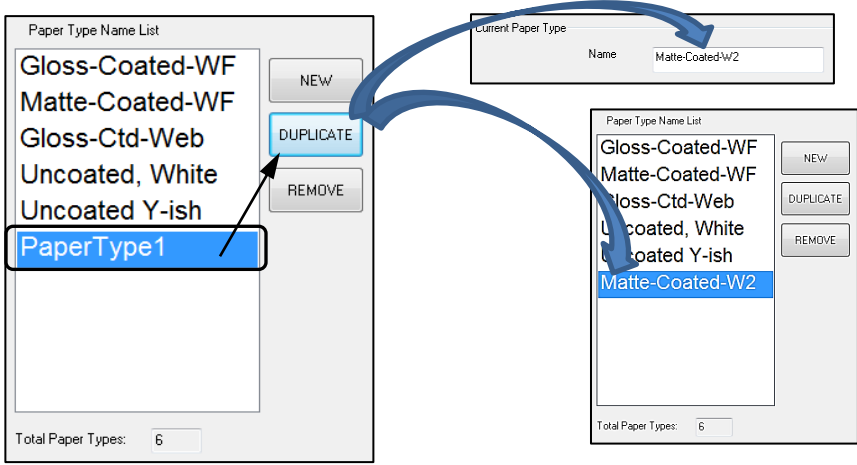
Figure 3.14: Paper Types Dialog

Create a New Paper Type

1	Touch the New button and PaperType1 displays in the Paper Type Name List and Name fields. The Total Paper Types field is increased by one.
2	To name the new paper type, touch the Current Paper Type Name field and enter the new paper type name. The new paper type name displays in the text entry data field of the keypad. Touch  and the new paper type name displays in the Paper Type Name List field and the keypad closes.
3	Select a manufacturer for the new paper type by touching the name in the Manufacturer list. The new manufacturer displays in the Manufacturer field.
4	Select a weight for the new paper type by touching one of the five paper weight buttons, 20# , 40# , 60# , 80# , or 120# . The selected button displays as depressed and the weight displays in the Weight field.
5	If the correct weight is not shown on the buttons, touch the Weight field, enter the new paper weight, and then press  to close the keypad. The new paper weight displays in the Weight field.
6	Select a grade for the new paper type by touching one of the grade buttons, 1-5 . The selected button displays as depressed and the grade displays in the Grade field.
7	If the correct grade is not shown on the buttons, touch the Grade field, enter the new paper grade and then press  to close the keyboard. The new paper grade displays in the Grade field.
8	Select a class name for the new paper type by touching one of the five Class buttons. The selected button displays as depressed and the class name displays in the Class Name field.
9	<p>Select target values for the new paper type by touching the Targets button to display the Target Setup dialog.</p> 
10	Touch the Target Density field and the Clarios message box displays.

11	Touch the OK button, enter a target density value for the paper by touching the keypad keys, and touch  to close the keypad. The new target density value displays in the Target Density field.
12	Touch OK to save the new target density and close the Target Setup dialog.
13	Touch Apply on the Paper Types dialog to save changes to new paper type. Note: If you select the OK button instead of Apply , the Paper Types Message dialog displays “Do you want to save changes unapplied?”.
14	Touch OK to save the change and close the Paper Types dialog.

Duplicate a Paper Type

1	<p>At the Paper Type Name List, touch the name of the paper type to be copied and it becomes highlighted.</p> 
2	Touch the Duplicate button and PaperType1 displays in the Paper Type Name List and is highlighted.
3	Follow steps in Create a New Paper Type .

Remove a Paper Type

1	At the Paper Type Name List , touch the name of the paper type to be removed and it becomes highlighted.
2	Touch the Remove button and the paper type name is deleted from the list.
3	The number in the Total Paper Types window is decreased by one.
4	Touch OK to close the Paper Types dialog.

3.11 Ink Types

Note: This is installer configurable only.

The ink library contains standard ink names for process and special inks. Up to 100 ink names may be entered.

An ink library entry has these values: Ink Name, Filter, Display Color, and Tolerance Rule. These four values are replaced in the inker if a new ink library entry is selected from the list.



Double-touch the **Ink Types** icon to open the Ink Setup dialog.

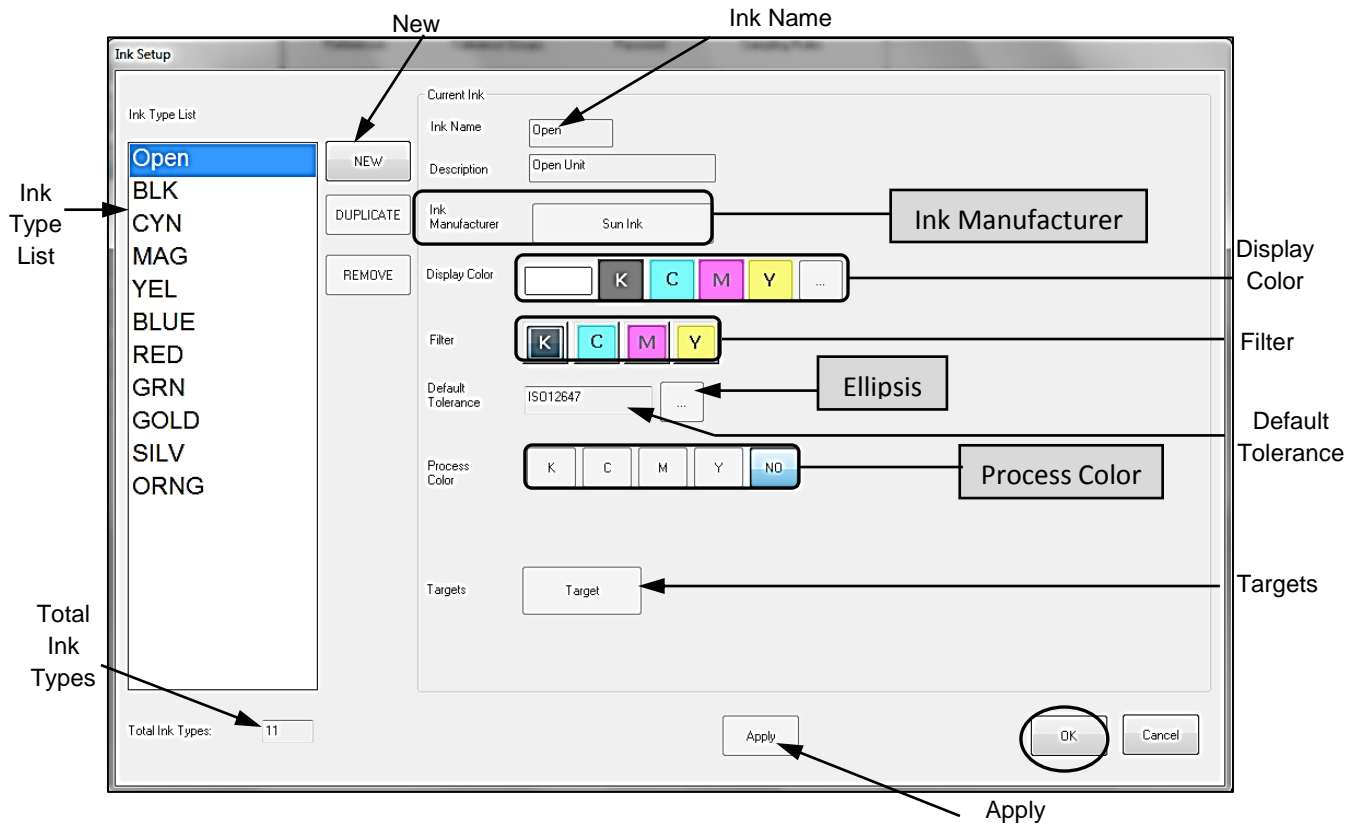


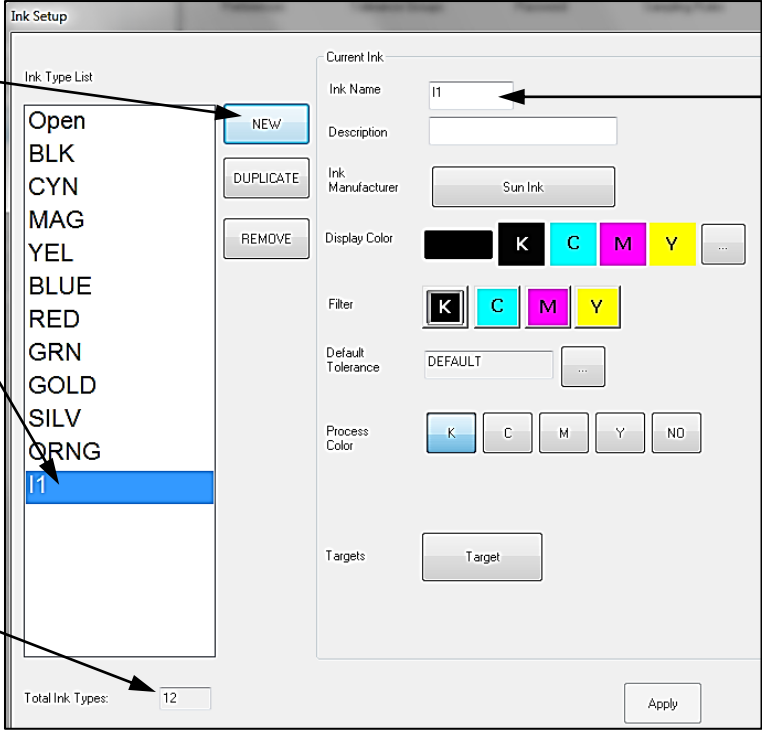
Figure 3.15: Ink Setup Dialog


You can create a new ink type, duplicate an existing ink type, and remove an ink type.

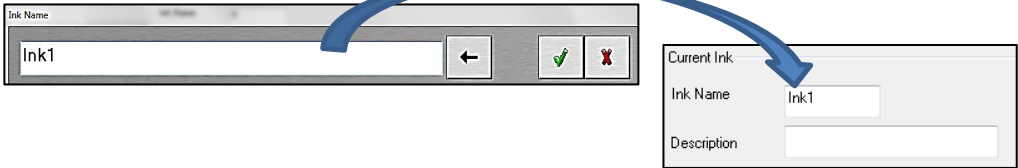
Note: If you are adding an ink type that will be run the same as an existing ink, use the **duplicate** process instead of creating a **new** ink.


Create a New Ink Type


1 Touch the **New** button and **I1** displays in the Ink Name field. **I1** also displays and is highlighted in the **Ink Type List** and **Total Ink Types** increases by one.



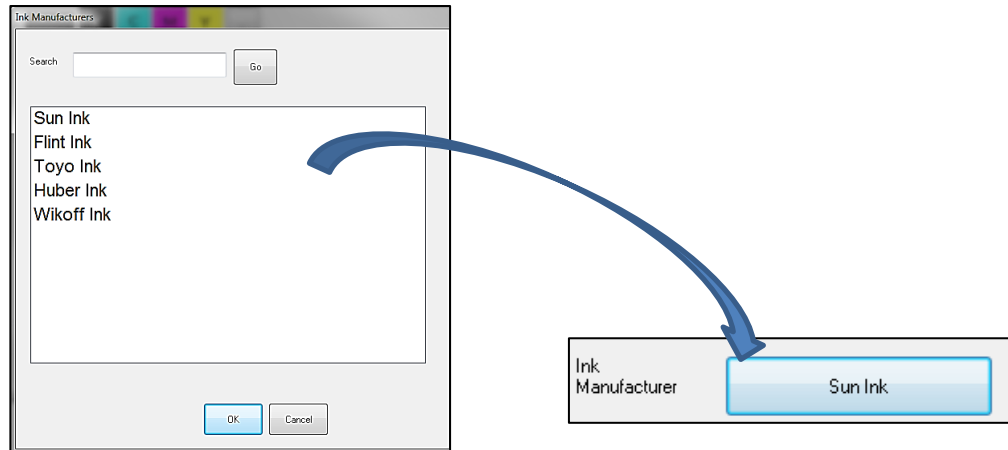
2 Touch the **Ink Name** field and enter the new ink name (up to four characters) by touching the keypad keys. Touch  to close the keypad and the new ink type name displays in the **Ink Name** field.



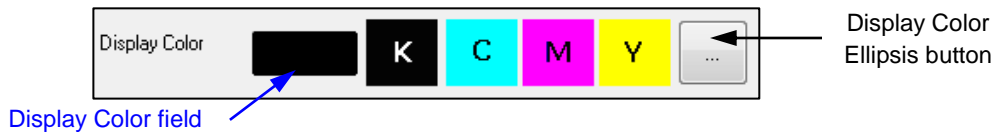
3 To add an optional description of the new ink type, touch the **Description** field and enter the description. Touch  to close the keypad and the new ink type description displays in the **Description** field.



- 4** Click on the **Ink Manufacturer** button to specify an ink type. On the Ink Manufacturers dialog, select an **ink type** and touch **OK** to save and close the Ink Manufacturers dialog. The selected ink type displays in the **Ink Manufacturer** field.



- 5** Select a **Display Color** by touching one of the four color buttons, **K**, **C**, **M**, or **Y**. The selected button displays as depressed and the selected color displays in the **Display Color** field.

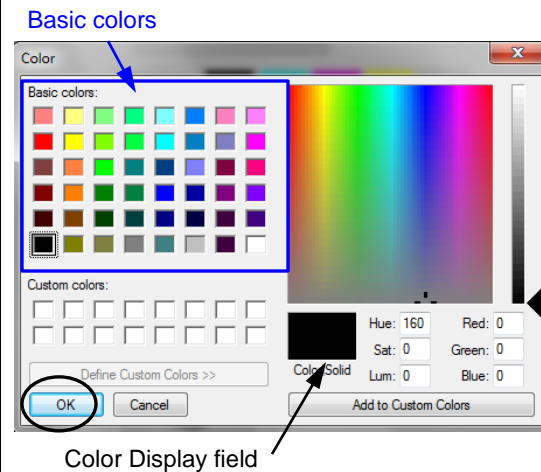




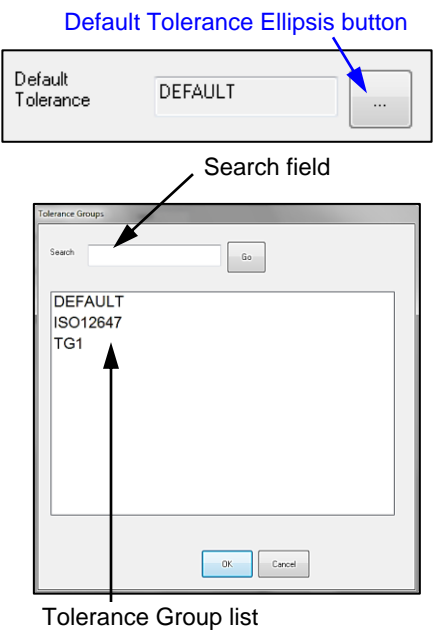

The display color is the color used on the **Web Data** views when Clarios displays scan results for the inker.

If the desired color is not shown on the four buttons, touch the **Display Color Ellipsis** button. The Color dialog displays.

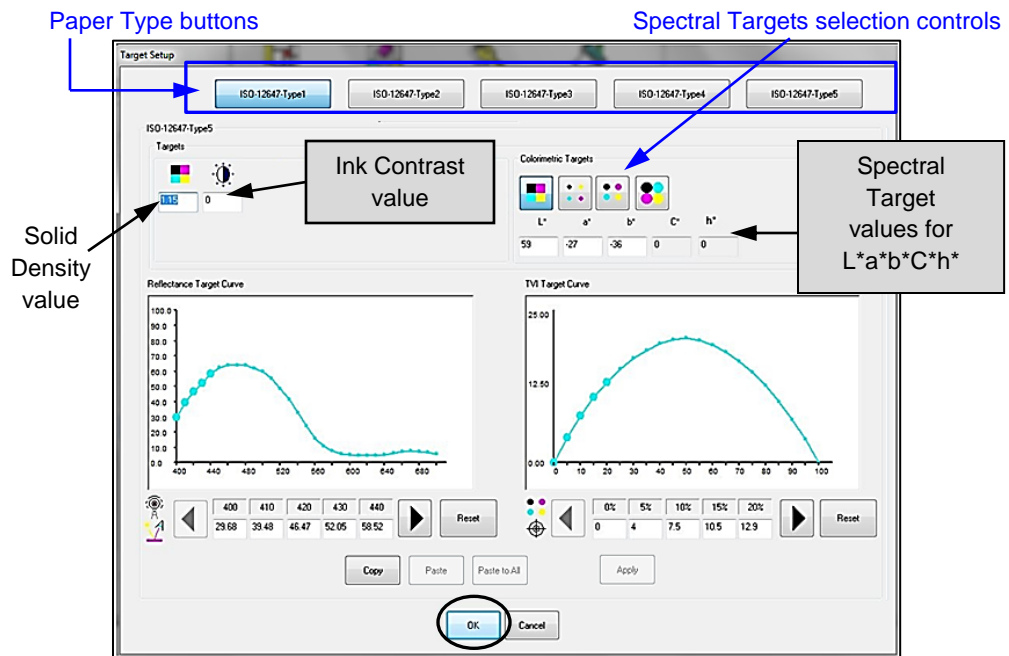
Select the new color changes by touching the desired color from the **Basic colors** palette. It displays in the **Color Display** field.

Touch **OK** to save the color and close the Color dialog. The new color displays in the **Display Color** field on Ink Setup dialog.



<p>6</p>	<p>Select a Filter for the new ink type by touching one of the four buttons, K, C, M, or Y. The selected button displays as depressed.</p>  <p>The filter is used to measure ink density for each inker and is the measured color with the darkest density. To select a filter, you must first measure a color sample with a handheld. The readings on the handheld densitometer show the densities for all four colors. Select the highest reading for the best filter.</p>
<p>7</p>	<p>Select a Default Tolerance for the new ink type by touching the Default Tolerance Ellipsis button.</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>When the Tolerance Groups dialog opens, select the desired tolerance group for the new ink type by touching the name in the list or perform a search.</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>To perform a search, touch Search field.</p> <ul style="list-style-type: none"> ➤ Enter the name by touching the keypad keys. The name displays in the keypad text entry data field. ➤ Touch the  button and the name displays in the Search field. ➤ Touch Go button to start the search. </div> <div style="border: 1px solid black; padding: 5px;"> <p>When the desired name displays in the Search field, touch OK to select it and close the Tolerance Groups dialog.</p> </div> <div style="margin-top: 10px;">  <p style="text-align: center;">Tolerance Group list</p> </div> <p>Tolerance Group specifies process and control limits in Web Data views.</p> <ul style="list-style-type: none"> ➤ Limits - Each Tolerance Group must specify a control limit and process limit between 0.00 and 3.00 for target densities. The control and process limits are symmetrical ranges (+ and -). ➤ Control limit - displays as a dashed line in the Key Position view. Values are acceptable if they fall inside the control limits. ➤ Process limits - outer limits mark the maximum variation. ➤ Tolerance rule values - +/- the targets. The tolerance rule is used when displaying scan results for the inker, as shown in the Web Data views, and in making ink key move recommendations in closed loop.
<p>8</p>	<p>Select the Process Color for the new ink type by touching one of the five buttons, K, C, M, Y, or NO. The selected button displays as depressed.</p> 

- 9 Select the **Target** for the new ink type by touching the **Targets** button. The Target Setup dialog displays.



Target values are values at which the inkers are preset. The default is 0.01.

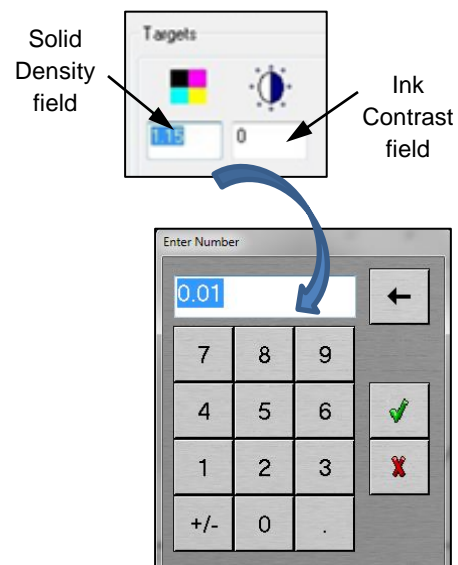
Notes:


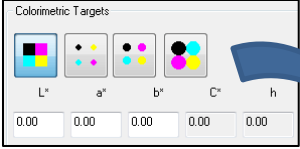
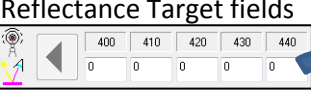
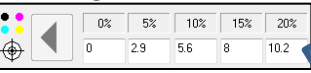

- Entering a new target density value will set all targets for the new ink type to the values entered on the Target Setup dialog.
- Only $L^*a^*b^*$ values can be entered; C^*h^* values are calculated.

Select a paper type by touching one of the five **Paper Type** buttons. The selected button displays as depressed.

For density control:

- Touch within the **Solid Density** and/or **Ink Contrast** fields.
 - Enter the new values and then touch to close the keypads.
 - Touch the **Apply** button to save the changes.
- Note:** The new values display in the respective fields when the paper type button is touched.
- Touch **OK** to save the changes and close the Target Setup dialog.



<p>For spectral control (optional):</p> <ul style="list-style-type: none"> ➤ Touch within the Colorimetric Targets, Reflectance Target values, and/or TVI Target values fields. ➤ Enter the new values and then touch  to close the keypads. ➤ Touch the Apply button to save the changes. <p>Note: The new values displays in the respective fields when the paper type button is touched.</p> <ul style="list-style-type: none"> ➤ Touch OK to save the changes and close the Target Setup dialog. 	<p>Colorimetric Targets fields</p>  <p>Reflectance Target fields</p>  <p>TVI Target fields</p>  
<p>10 Touch Apply and then OK to save changes and close Ink Setup dialog.</p> <p>Note: If you select the OK button instead of the Apply button, the Ink Types message box displays the message “Do you want to save changes?”.</p>	

Duplicate an Ink Type

1	At the Ink Type List , touch and highlight the ink type name to be copied.
2	Touch the Duplicate button and the new ink type name displays in the Ink Type List and Ink Name field, and is highlighted.
3	Follow steps in Create a New Ink Type .

Remove an Ink Type

1	At the Ink Type List , touch and highlight the ink type name to be removed.
2	Touch the Remove button and the ink type name is deleted from the list and the number in the Total Ink Types field is decreased by one.
3	Touch the OK button to save changes and close the Ink Setup dialog.

3.12 Color Bar Configuration

Note: This is installer configurable only.

Systems using a single color bar use types Primary or Classic. Systems configured for multiple color bars may use types Primary, Classic, Secondary, and No Feature.



Double-touch the **Color Bar Configuration** icon to open the Color Bar Configuration dialog.

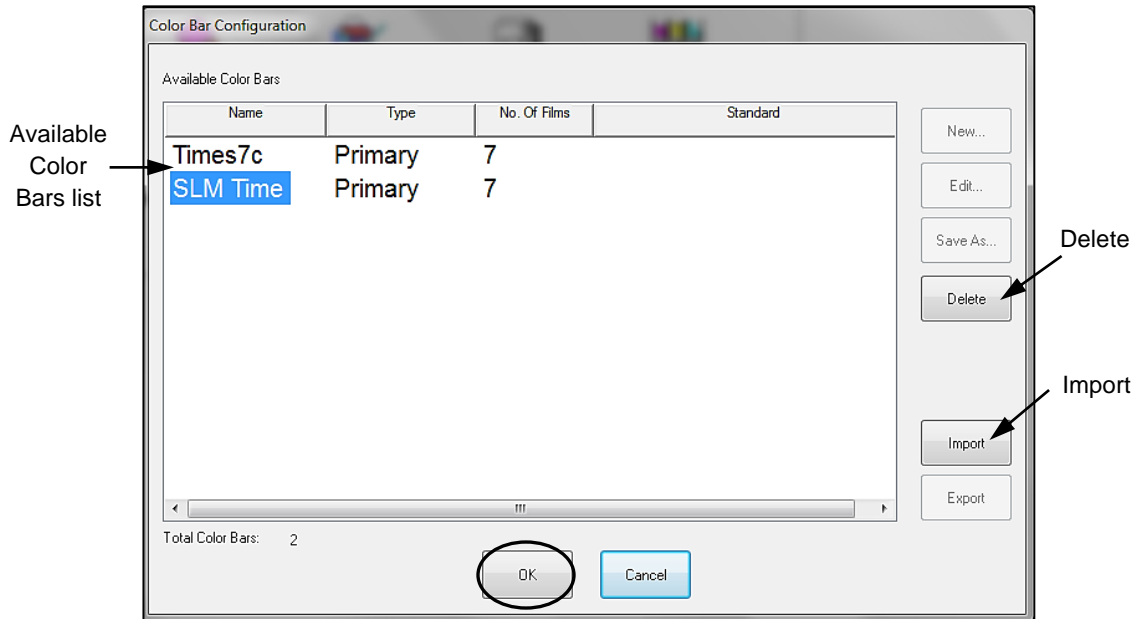
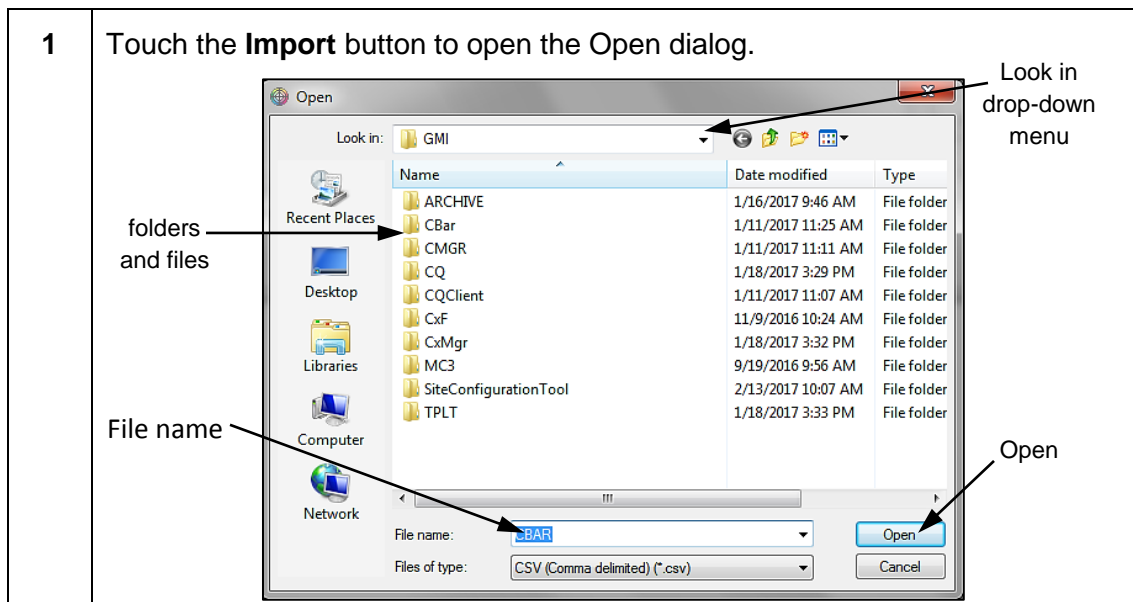


Figure 3.16: Color Bar Configuration Dialog

Import a Color Bar



2	Use the Look in drop-down menu to locate the file of the desired color bar.
3	When the file name of the color bar to be imported is displayed in the File name field, touch the Open button to download the new color bar file and close the Open dialog. Note: You can replace the file name with a long description for the colorbar pattern.
4	The new color bar name displays in the Available Color Bars list and the number in the Total Color Bars field increases by one.
5	Touch OK to save the change and close the Color Bar Configuration dialog.

Remove a Color Bar

1	At the Available Color Bars list, touch and highlight the name of the color bar to be removed.
2	Touch the Delete button and the name is deleted from the Available Color Bars list and the number in the Total Color Bars field is decreased by one.
3	Touch OK to save the change and close the Color Bar Configuration dialog.

4 Color Bars

WARNING: Changing the color bar installed by AVT Customer Service may adversely affect the performance of the Clarios system. Changes to the color bars should only be made by trained personnel.

4.1 Clarios Color Bars

The color bar shown on the Clarios workstation monitor must precisely match the color bar printing on the form.

AVT Customer Service provides custom color bars. To add a color bar provided by AVT, see [Color Bar Configuration](#). It is strongly recommended that you do not change the setups for the color bars provided by AVT Customer Service. If the color bar requires adjustment, contact Customer Service.

RRS Color Bar

The Rapid Response Scanning (RRS) color bar has small, specially-shaped swatches to evaluate density. A GBT swatch is in every key of an RRS color bar.

The following figure shows a sample RRS color bar.



Figure 4.1: RRS Color Bar Sample

Clarios uses a spectrophotometer to measure and control color.

Spectrophotometer: An instrument for measuring and comparing the intensities of the colors of the spectrum.

A densitometer measures how much light is absorbed by the ink and substrate combination. Density is relative to the thickness of the ink film. Clarios compares the measurement to a standard value (the target density).

- Shop standard target densities are:

K: _____ C: _____ M: _____ Y: _____

- SWOP (Specifications for Web Offset Printing) standards are:

K: 1.60 C: 1.30 M: 1.40 Y: 1.00

4.2 Color Bar Types

Clarios uses four types of color bars. If your system uses only one color bar to a form, then your color bar is either a Primary or Classic color bar. If your system is configured for multiple color bars, then it is possible you may have any of the four types.

Note: You must add a primary color bar before adding secondary color bars. You can only delete a primary color bar after deleting secondary color bars.

Primary Types

- **Primary:** The standard color bar with locator marks and non-solid swatches that have a solid area around the swatch feature.
- **Classic:** A color bar with locator marks and non-solid swatches that are completely non-solid (there are no solid areas within the swatch). A non-solid swatch must be placed next to its corresponding solid swatch (e.g., a cyan tint swatch must be placed next to a cyan solid swatch).

Secondary Types

- **Secondary:** Similar to the Primary color bar, but has no locator marks. The non-solid swatches have solid area around the swatch feature.
- **No Feature:** There are no locator marks in the color bar and there are no features in the swatches.

4.3 Color Bar Files Import

Clarios only supports importing color bars in the .csv format. These color bars are imported using the Clarios workstation computer. See [Color Bar Configuration](#) for step-by-step instructions.

4.4 Color Bar Changes

WARNING: Changing the color bar installed by AVT Customer Service may adversely affect the performance of the Clarios system. Changes to the color bars should be made only by trained personnel.

If you must make or edit a color bar, it is extremely important that you first take some time to analyze the color bar.

- 1) Study the color bar spreadsheet provided as an electronic file with the color bar. The spreadsheet contains critical information such as location, size, position, and color for each color bar element.
- 2) Most color bars have a pattern of elements (and sometimes gaps) that repeat within the color bar. Examine the color bar sample to identify the repeat, including any gaps.
- 3) Identify the beginning (first element on the left edge) and the end (last element on the right edge) of the color bar. The beginning and end are locked together, and are usually in the same position as the repeat.

Note: Each color bar has an index, indicating the center of the color bar.

4.5 Color Bar Menu

From any view, touch the **Utilities** View Selector button. At the **Configuration** tab, double-touch the **Color Bar Configuration** icon to open the Color Bar Configuration dialog.

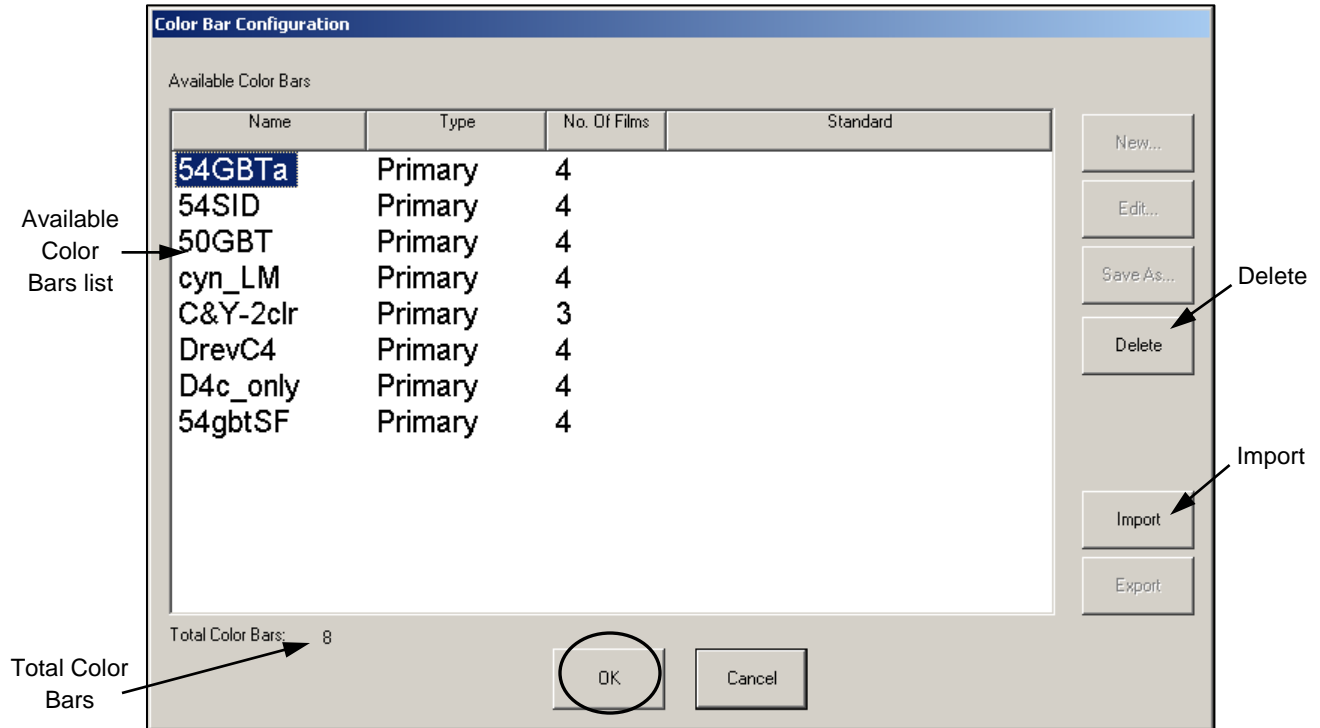


Figure 4.2: Color Bar Configuration Dialog

- **Available Color Bars List** - Displays a list of available color bars included in the library.
- **Total Color Bars** - Displays the total number of color bars available.
- **Delete** - Erase a color bar from the Clarios system's active memory.
- **Import** - Import a .CSV file for use as a color bar.

4.6 Customized Color Bars

You can create a customized color bar using a spreadsheet program, such as Microsoft Excel, and import it into Clarios. The spreadsheet file must be saved as a .CSV (comma-separated values) file and its fields must contain certain data.

WARNING: Changing the color bar installed by AVT Customer Service may adversely affect the performance of the Clarios system. Changes to the color bars should be made only by trained personnel.

To import a .CSV file for use as a color bar, or to delete a color bar, see [Color Bar Configuration](#) for step-by-step instructions.

5 Maintenance

There are several Clarios parts that require regular maintenance by the customer to ensure continued precise and safe operation of the system.

WARNING: Only trained personnel should service any On-Press unit parts.

WARNING: Turn OFF all power to the On-Press unit before servicing.

WARNING: On-Press unit maintenance should be performed when the press is not running.

5.1 Cleaning Probe Heads

The probe head has a built-in camera for locating the color bar, a spectrophotometer for measuring color, and a calibration plate inside the On-Press cabinet to calibrate both the camera and spectrophotometer during normal operation. To measure the color bar accurately and reliably, all components must be dirt free.

The process to clean a single head takes about 30 minutes, and includes removing, cleaning, and reassembling the head. Each AVT On-Press has two heads, one for the upper and one for the lower surfaces. Allow 60 minutes per AVT On-Press unit.

It is important to replace the same head on the same mounting plate after cleaning. If the probe head is replaced or probe heads are swapped, the probe head will need to be re-aligned using the realigning procedure for probe head replacement.

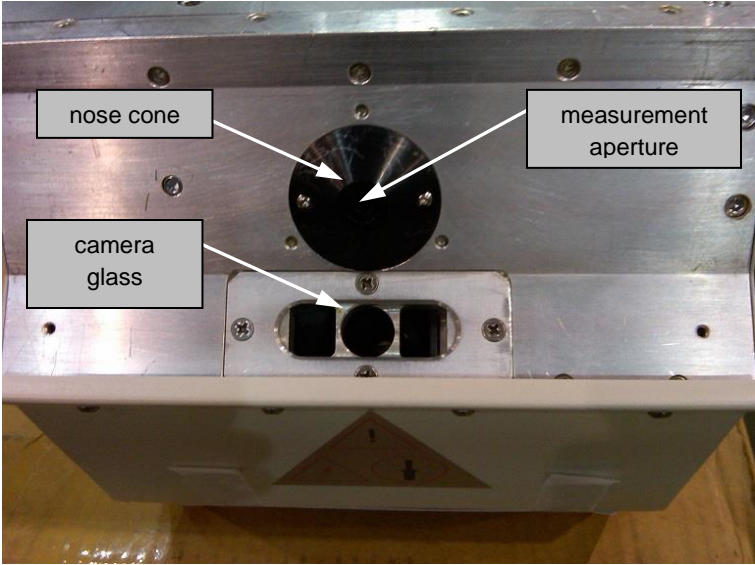
Clean Standard Probe Head and Calibration Plaque

Maintenance of the standard probe heads must be done periodically. The frequency that this is required depends greatly on the environmental conditions where the PH is operating, etc. When working on the probe head, take care that it does not receive any major shock, as this may cause misalignment of the optics, etc. requiring factory repair.

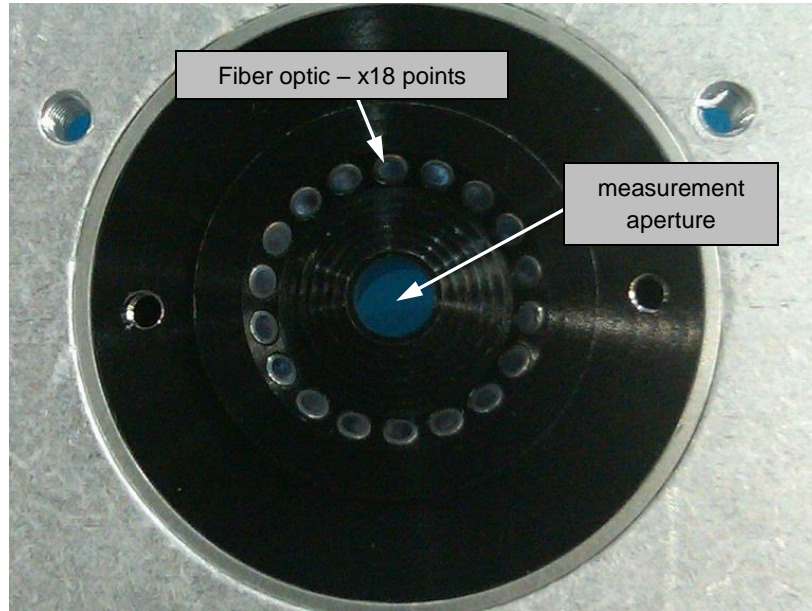
Standard Probe Head and Calibration Plaque Procedure

Perform the steps below, as needed, to maintain proper performance of standard probe heads.

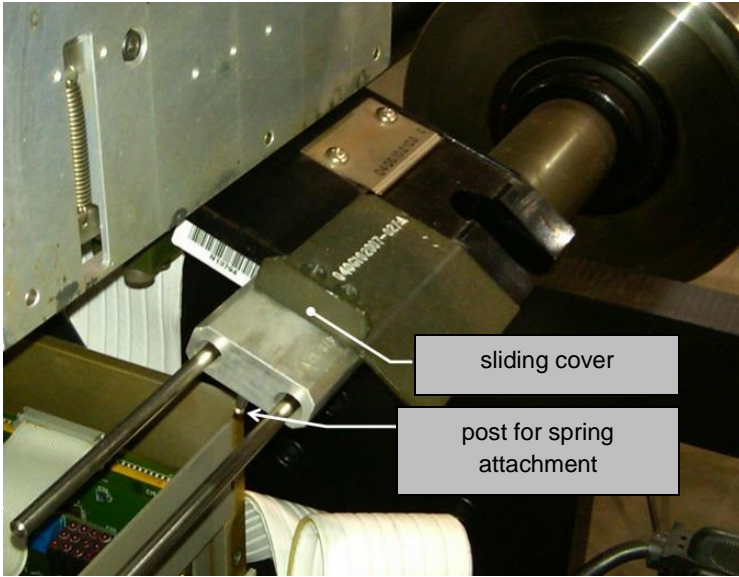
1	Turn off the power to the On-Press module (OPM) by turning off one of the switches on the outside of the On-Press. In most cases, this is a mushroom style button. Leave this switch in the OFF position throughout the procedure.
2	Open the On-Press cabinet door and manually push the heads out of the doghouse and over the read roller, so that they can be accessed from the sides of the OPM.

3	<p>The probe head is held on with two socket head cap screws (SHCS), one on each side of the probe head.</p> <p>Using a 9/64" allen wrench, loosen both screws slightly and then remove one entirely. Leave the other in so that you can reposition your hands to remove the final screw, while holding the probe head up from the bottom, so it does not fall off after removing the last screw.</p>
4	<p>The probe head may come off in easily at this point or may require a bit of wiggling to remove it. Once off, place it on a table of convenient work height.</p>
5	<p>Turn the probe head upside down so that you can access the nose cone and camera window. The figure below shows the orientation of components on the underside.</p> 
6	<p>Clean the camera glass with alcohol and a soft cloth. If necessary, you can remove the glass from the probe head to clean it on both sides by removing the 4 Phillips head screws and the aluminum frame. This should only be necessary in extreme circumstances.</p>
7	<p>Examine the nose cone and inspect it for obstruction and/or damage. Debris may accumulate in measurement aperture and will need to be cleaned out.</p> <p>Important: Do NOT let debris fall INTO the aperture.</p> <p>Tilt the probe head so nothing will fall into it. Use tweezers to remove paper debris. If necessary, remove the cone if there is a buildup of ink, etc. This requires a very small hex wrench, .050, to remove the two button head screws that hold it on. You can then remove the cone.</p> <p>Note: Nose cones on the probe heads can sometimes receive damage from web up devices, wear, etc. While some wear on the nose cone is acceptable, any major wear or damage should result in a nose cone replacement. Check to determine root cause of the wear or damage</p>

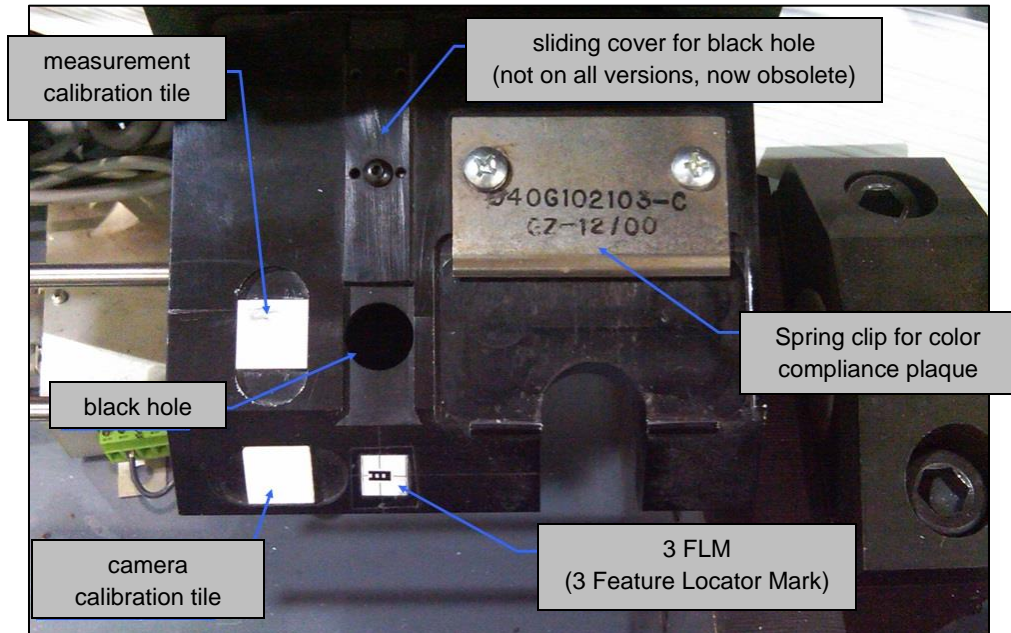
- 8** Under the cone is a fiber optic array of 18 elements that may need to be cleaned. Since the light from the probe head exits through this fiber optic array and it is this same light that reflects off the swatch and back to the spectrophotometer, this array must be perfectly clean. The recommended method is with a cotton swab and alcohol. See figure below.



- 9** After the glass, nose cone, and fiber optic array have all been cleaned, any parts removed from the probe head should be replaced.
These are the ONLY elements of the probe head that are user serviceable!
Return the probe head to the factory for repair for any other service required.

<p>10</p>	<p>Before replacing the probe head back into the system, you should thoroughly clean the calibration plaque. Remove the spring from the underside of the sliding cover. The spring merely sits in a groove on each post and it not permanently attached to either post. See figure below.</p> 
<p>11</p>	<p>Remove the sliding cover and clean it completely on all surfaces. This will keep dirt and dust from easily falling back from the cover to the calibration plaque when it is replaced.</p>
<p>12</p>	<p>Using a soft rag dampened with some alcohol, completely clean the entire calibration plaque. Remove all dust, etc. from all surfaces. Again, this will help to keep the calibration plaque cleaner for a longer period of time.</p>

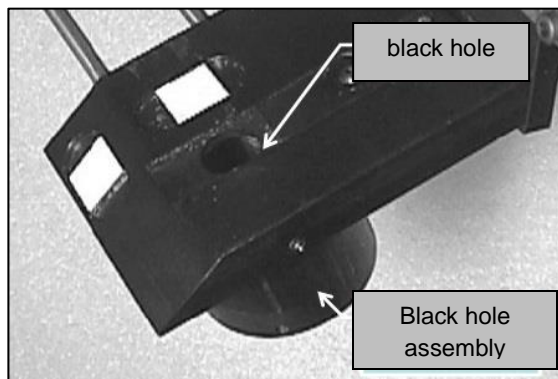
- 13** Using alcohol, thoroughly clean the white tiles (both of them). These should be pristine. Be careful not to scratch these tiles.



- 14** On the underside of the calibration plaque is a “black hole assembly”. Reach under the calibration plaque and give this a half twist to remove it.

The black hole is basically a cup with a cone in the bottom of it. When the spectrophotometer shines light down into this black hole, the light reflects down and to the side so that no light can reflect back. This is how the spectrophotometer compares pure black (or lack of light) to the pre-defined values of the white measurement tile.

Any dust or debris in this black hole can reflect light back and cause a mis-calibration of the probe head. Blow it out and replace it, giving it a half twist to secure it.



- 15** Clean the rods for the sliding cover. DO NOT BEND THEM!

16	Replace the sliding cover and spring. IMPORTANT: Check that the cover slides freely!
17	Replace the probe head onto the same carriage that it was removed from. Do not mix them up unless you are prepared to also run the Head Replacement procedure immediately following and before any production scanning. Secure the probe head tightly with both SHCS.
18	Perform steps 1 – 17 on the other probe head.
19	Move the probe heads slightly off the sliding cover of the calibration plaque and then close the OPM door.
20	Turn on the mushroom button on the outside of the OPM. Before attempting any system tests OR scanning, observe that BOTH probe heads initialize properly.

Clean “Stay Clean” Probe Head and Calibration Plaque

Stay Clean probe heads generally require less frequent cleaning than the standard versions in like environmental conditions.

The frequency of this procedure will vary greatly depending on the environmental conditions. Generally, factors that will increase the need for this cleaning procedure include the following:

- Ink misting from unit nearest the probe head.
- Air supply turned off or house air is not clean and dry. Verify all air hoses are connected and not clogged. Note that air supply should be set just enough to detect the movement of air. A positive pressure is all that is needed to keep the openings clean. High air volume is not only wasteful, but can create a condition that causes dirt to be attracted to parts critical to probe head functionality.
- Web breaks causing paper scraps to get lodged in probe head openings.

For newspaper usage, it is recommended that the heads be cleaned every two weeks. However, the cleaning interval depends on the usage of the equipment, local environment, and the quality of the inks and papers used.

Customer-Supplied Supplies

- 1) Compressed air

Note: Canned compressed air is available from computer and office supply stores. (Clean and dry internal compressed air may be used as an alternate.)

- 2) Press wash / ink cleaning solvent

Note: Available from screening and printing supply stores. (Product must be clean and not recirculated.)

- 3) Flashlight

- 4) Scissors

Probe Head and Calibration Plaque Cleaning Kit Supplies (PN 090G900730)

- 1) Cleaning solution, LCD monitor
(PN 037G600004)

- 2) Cloth, Microfiber
(PN 037G600003)

- 3) Applicator, cotton tipped
(PN Q54600005)

- 4) Cloth, Rags
(PN 037G600005)

- 5) 9/64" Allen head tool PN
039G200116)

- 6) .050" Allen head tool
(PN 039G200622)

- 7) Screw, #2 (2 provided)
(PN 031G101151-04)








Probe Head and Calibration Plaque Cleaning Kit
(PN 090G900730)



Applicator (PN Q54600005)

Stay Clean Probe Head and Calibration Plaque Procedure

Perform the steps below, as needed, to maintain proper performance of Stay Clean probe heads. This procedure is designed for use with Clarios probe heads, PN 055G400747-04 and 055G400747-08

1	Remove the Probe Head  <p>Important: Turn power off to On-Press unit. A yellow button and indicator light are provided on each side of the cabinet that will de-energize the probe head motors if either one is depressed. The indicator light will go out.</p> <p><u>Do Not Proceed any further until the indicator light is off and power is verified to be off.</u></p>
<p>If applicable, pull out on the guard locking screw and slide the guard toward the gear side of the press. This will expose the probe head and drive belt. Move the probe head out as shown in the following figure. This will allow easy access to the mounting screw.</p>	
 	
<p>Disconnect the air supply hose on the back of the probe head. This is a quick disconnect coupling. Remove the Allen Head 9/64-inch screw using the tool provided.</p>	
 	

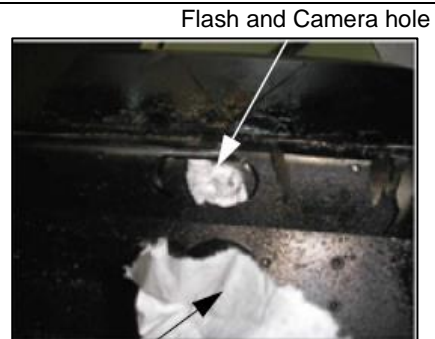
Remove the second 9/64-inch Allen screw with the tool provided. The probe head will remain on the mounting plate on two alignment pins.

Caution: With both screws removed, the probe head can fall off. Gently pull it out, being certain you have a good grasp on the probe head so it is not dropped. The probe head may require gently rocking left to right, since the electrical plug and alignment pins are a tight fit.

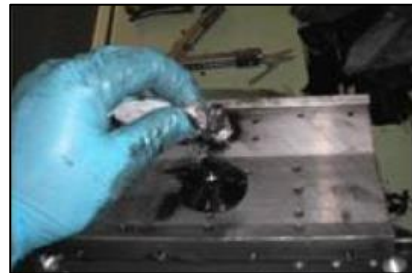


2 Clean the Probe Head

Place probe head on a solid surface and plug the flash hole, camera hole, and spectral hole with pieces cut to size from kit supplied microfiber cloth (PN 37G600003). Cloth prevents cleaning solvents from destroying delicate optics.

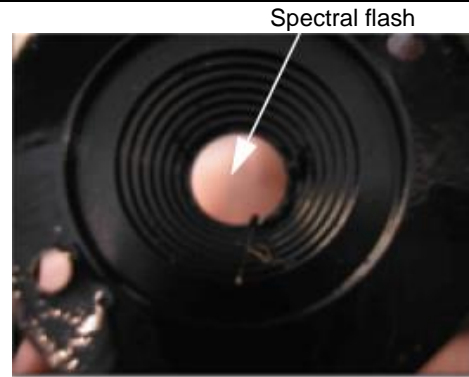
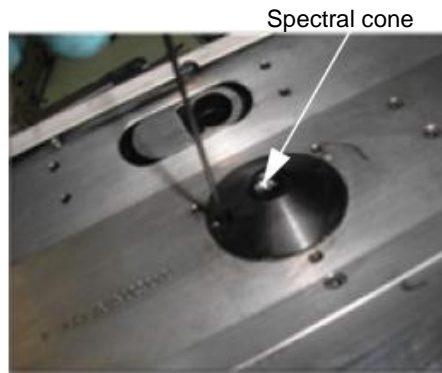


With the openings protected, clean ink off the probe head housing with the customer supplied press wash / ink cleaning solvent and kit supplied cloth rags (PN 037G600005). After the outside is clean, remove soiled microfiber cloths. Interior areas can now be cleaned.



3 Clean the Spectrophotometer

Using the Allen head wrench provided, remove the two small screws holding the spectral cone to the probe head body. Clean inside of cone using a clean piece of microfiber cloth dampened with kit supplied LCD Screen Cleaning solution (PN 037G600004).



With the cone removed, the spectral flash (a very delicate part) is exposed.

- The first cleaning step calls for any loose debris to be blown free using canned or dry compressed air. Be careful not to blow loose debris down the spectral opening.
- The second cleaning step calls for a clean piece of microfiber cloth to be dampened with LCD Screen Cleaning solution. Using the wood end of the kit supplied cotton tipped applicator (PN Q546000005) and the cloth, gently wipe the area to remove any remaining debris.
- Reinstall the spectral cone using new hardware provided.

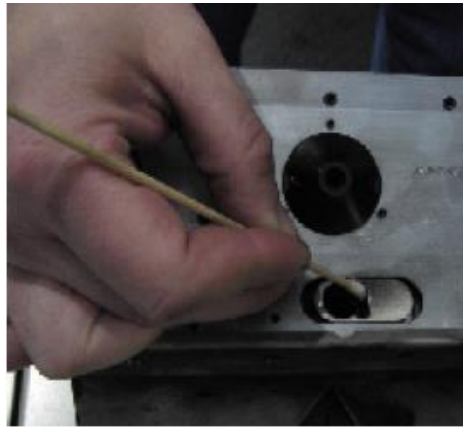


Note: The spectral optics should only have air blown inside to clean them. If the spectral optics are contaminated, more damage will be done attempting to clean them than by leaving them alone. If the spectral optics are contaminated, send the probe head back to AVT to be cleaned and rebuilt. Replace with a spare probe head and follow the realigning procedure for probe head replacement.

4 Clean the Camera and Flash

The camera and flash area may require cleaning several times to ensure all ink and debris is removed.

The first cleaning step calls for a clean piece of microfiber cloth to be dampened with LCD Screen Cleaning solution. Using the wood end of cotton tipped applicator and the cloth, gently wipe debris from the flash and camera area. Use canned or dry compressed air to blow the flash area dry. Inspect with a flashlight to confirm that the surface is clean.



Clean the camera opening and inspect for excess debris.

As a general rule it is not necessary to clean the camera surface since the actual lens is far inside and typically remains clean. The risk of damaging the camera by cleaning is high and should be avoided if possible.





If debris is observed, blowing it out with canned or dry compressed air is recommended. Remove the remaining debris if necessary, using a clean microfiber cloth dampened with LCD Screen Cleaning solution. Be extremely gentle when cleaning.



Re-mount the probe head on the same rail where the probe head was removed.

It is important that the probe head be replaced in the position where it was removed or a realignment procedure will need to be done for the probe head to function properly.

Note: Confirm that the probe head is flush with the mounting plate prior to tightening the mounting screws.

5	<p>Clean the Calibration Plaque</p>
	 <p>Inside the cabinet of each probe head has an assembly with white tiles and a black hole, which are used to keep the camera and spectrophotometer in calibration throughout the day.</p> <p>To access area, remove spring-loaded cover. Wipe off excessive ink using a clean microfiber cloth dampened with LCD Screen Cleaning solution.</p>
	<p>Caution: Do not wipe tiles with kit supplied rags. The tiles can become scratched and should only be cleaned with a clean piece of microfiber cloth dampened with LCD Screen Cleaning solution.</p> 
	<p>The cup on the bottom can accumulate paper dust and should be removed from the bottom of the assembly and blown out with canned or dry compressed air.</p> <p>The black hole cup can be removed by twisting and pulling down. Do not wipe the interior of the cup.</p> <p>Gather all soiled cotton tipped applicators, rags, and cloths used in the cleaning procedure and dispose of them properly.</p>
	 
	<p>Re-assemble calibration plaque, close all covers, and power-on On-Press unit.</p>
6	<p>Test the Probe Head</p> <p>See System Tests for details on how to run a system test.</p>

5.2 Checking Overhead Brackets & Fasteners for On-Press Units

If your Clarios On-Press unit(s) are suspended from an overhead frame, mounting brackets and fasteners must be checked for soundness and tightness as part of your periodic plant maintenance program.

Note: Consult with AVT Customer Service for any questions about adjusting brackets or fasteners. See the inside front cover of this manual for contact information.

- There are two sets of brackets and fasteners: a primary set and a secondary set. Each set has sufficient strength to support one or two On-Press units. The secondary fasteners carry the gravity load if the primary fasteners fail. The vertical mounting bolts are intended to be the primary fasteners.
- If there is a loss of web tram, examine primary fasteners. Do not use fasteners as jacking screws to tram On-Press units. Use steel shims for tramping.
- No gaps should exist between closely fit surfaces of the On-Press unit and the mounting brackets. If there are two units, there should be no gaps between closely fit surfaces of the upper and lower On-Press units.

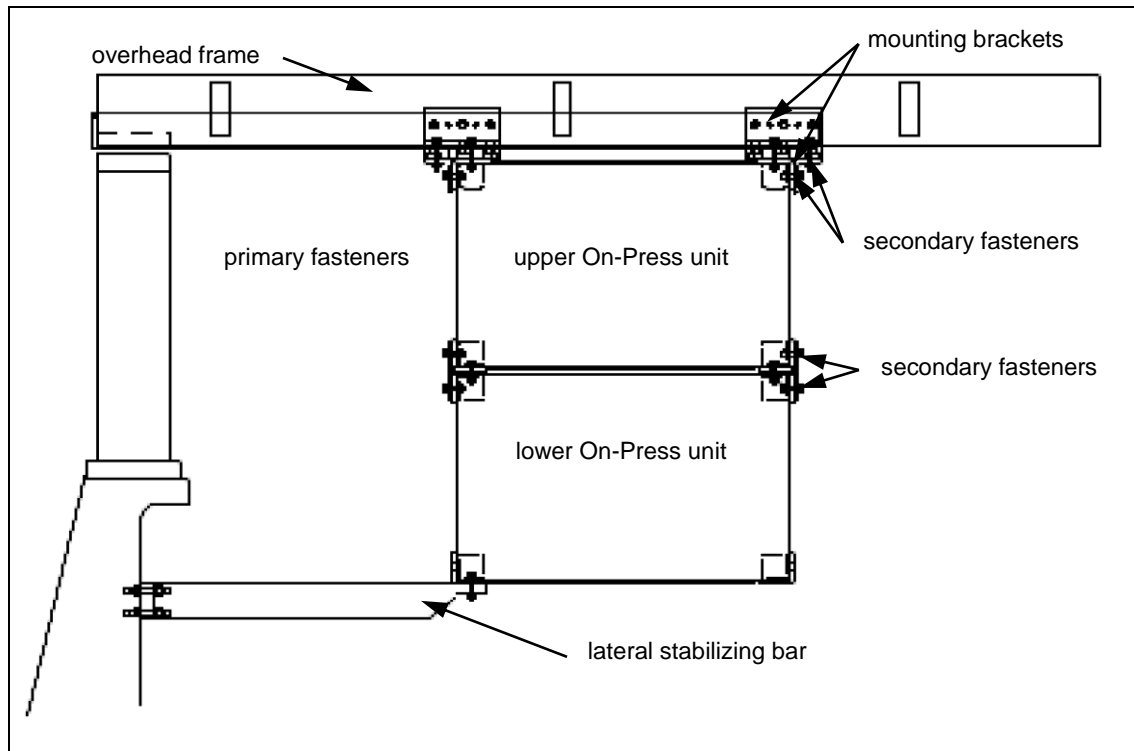


Figure 5.1: Example of Installation of Suspended On-Press Units (side view)

WARNING: The lateral stabilizing bars are *not* intended to provide support for any additional gravity loads from people or machinery placed upon them. If the lateral stabilizing bars are to be used as a platform for operators or machinery, additional structural members must be added and configured so no additional gravity or lateral loads are passed to the On-Press units.

6 Replacement Parts

When AVT Customer Service sends replacement parts, trained personnel can install them according to the instructions in this chapter.

The following parts are user-replaceable:

- Clarios Workstation Computer
- Clarios Server Computer
- On-Press Computer
- Scan Head
- Quadrature Encoder Assembly
- RIO PLC Speed Switch Devices (MUX)
- Press Signal Interface
- Calibration Cover
- Roller Guards
- Idler and Measure Rollers
- Servo Drive Assembly
- White ribbon cable
- Limit switches
- Probe head carriage

Note: The Quadrature Encoder Assembly is not typical in Clarios installs. Clarios typically uses an OEM supplied encoder.

6.1 Clarios Workstation Computer

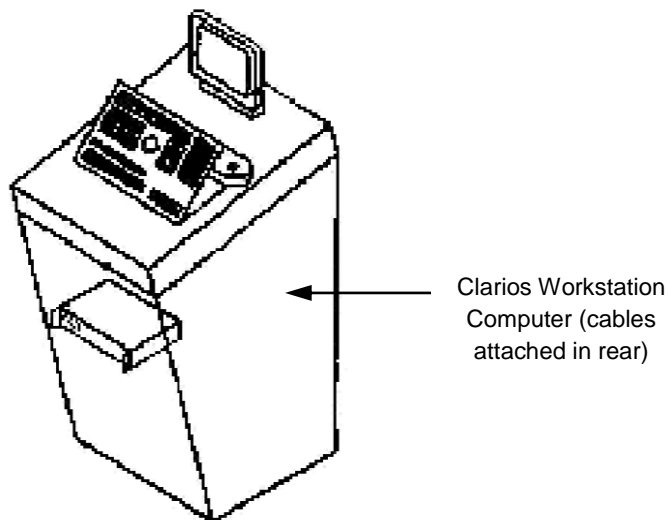


Figure 6.1: Clarios Workstation Console with Computer

WARNING: To avoid corrupting the Windows operating system, exit the Clarios workstation application and shut down the Clarios workstation computer using Windows procedures. Turn OFF power to the Clarios workstation console before servicing.

NOTE: Computer models and enclosures may vary.

Replace Clarios Workstation Computer

1	After turning off power, open the front panel of the console.
2	Gently pull the computer part way out of the console, being careful of the cables still attached to the computer rear. Disconnect the cables from the back and place the computer aside.
3	Connect the cables to the new computer and secure them with the screws. Place in console.
4	Turn computer power on. Note: Before turning on the Clarios workstation computer, be sure Color Manager and Clarios server computers/applications are turned on and connected to the Clarios network.

Restore Files to New Computer after Replacement

1	After the old computer is replaced with a new computer, the power is on, and the computer has fully booted, insert the AVT-supplied removable media (thumb drive) into one of the computer's USB slots.
2	Double-click the My Computer icon on the desktop.
3	Note the drive letter of the removable media.
4	Close the My Computer window.
5	Start the program by double-touching the Clarios Client icon on the desktop.
6	At the prompt, enter the drive letter from step 3 (no colon [:] is necessary). Then follow the on-screen instructions.
7	After the program completes and before removing the media from the computer, look on the screen by the clock at the active icons. Locate and click on Safely Remove Hardware icon and select the removable media device to be removed.
8	Remove the thumb drive from the computer and make sure that it is still attached to the inside of the cabinet near the computer.
9	Power off the computer, using Shut Down not Restart .
10	Close the door panel, then turn on power to the console and computer.

Issues When Replacing Clarios Workstation Computer

- Make sure the date, time, and time zone are correct. Windows sometimes changes the time because the time zone was set.
- The Customer Net and AVT_NET interfaces may be reversed and the Clarios workstation computers may not communicate with the servers, as observed on the server program displays. This may occur because Windows sometimes changes the order that the Ethernet interfaces appear in the registry. This can be resolved by swapping the Ethernet cables in the back of the computer. Contact Customer Service if swapping the cables does not solve the problem.

6.2 Clarios Server Computer

Replace Clarios Server Computer

WARNING: Exit Clarios server application and shut down the computer using Windows procedures to avoid corrupting the Windows operating system. Turn off the Clarios workstation console before servicing.

NOTE: Computer models and enclosures may vary.

1	After turning off the power, open the front panel of the console.
2	Gently pull the computer part way out of the console, being careful of the cables still attached to the computer rear. Disconnect the cables from the back and place the computer aside.
3	Connect the cables to the new computer and secure them with the screws. Place the computer in the console.
4	Turn the computer power on.

Restore Files to New Computer after Replacement

1	After the old computer is replaced with a new computer, the power is on, and the computer has fully booted, insert the AVT-supplied removable media (thumb drive attached to inside the cabinet near the computer) that contains the back up into one of the computer's USB slots.
2	Double-click the My Computer icon on the desktop.
3	Note the drive letter of the removable media.
4	Close the My Computer window.
5	Double-touch the Clarios AppServer icon on the desktop to start program.

6	At the prompt, enter the drive letter from step 3 (no colon [:] is necessary). Then follow the on-screen instructions.
7	After the program completes and before removing the media from the computer, look on the screen by the clock at the active icons. Locate and click on the Safely Remove Hardware icon near the clock in the task bar, and select the removable media device to be removed.
8	Remove the thumb drive from the computer and make sure that it is still attached to the inside of the cabinet near the computer.
9	Power off the computer, using Shut Down not Restart .
10	Close the door panel, then turn on the power to the console and computer.

Issues When Replacing Clarios Server Computer

- Make sure the date, time, and time zone are correct. Windows sometimes changes the time because the time zone was set.
- The Customer Net and AVT_NET Ethernet interfaces may be reversed and the Clarios workstations and OPs will not connect, as observed on the Print Quality Manager program display. This may occur because Windows sometimes changes the order that the Ethernet interfaces appear in the registry. This can be resolved by swapping the Ethernet cables in the back of the computer. Contact Customer Service if swapping the cables does not solve the problem.

6.3 On-Press Module (OPM)

There are numerous components within the On-Press Module. These include, but are not limited to, the following:

- On-Press computer
- servo drives
- probe heads and carriages
- press signal interface board
- servo interconnect board
- isolation transformer
- calibration plaques
- power supply
- probe head beams
- white ribbon cables
- various interconnecting cables
- read rollers
- guarding, etc.

As nearly all of these components are interrelated to each other, a failure on one component can easily mimic a failure in another component. This can make troubleshooting these components individually very problematic, as there are very few “static” tests that can be done without extensive tools and lab equipment to perform these tasks. This is why you will often find tech support specialists asking you to swap major components with known good components, to try to narrow in on the most likely suspect component. Some of these tactics will be brought out here, but we will also attempt to define how the components interact so that the troubleshooter may apply their own logic.

The OPM receives power to the terminal strip usually found at the bottom of the On-Press cabinet. From there, it splits off to power a couple of power supplies, as well as an isolation transformer.

- The isolation transformer supplies power to the OP computer.
- The large 24V power supply provides power to the servo drives and safety relay / circuit.
- The smaller, DIN rail-mounted, 24V power supply provides power to the press events.

When the OPM door is opened or if a mushroom button on the module is depressed, the power is cut to the On-Press computer only. Power is still live inside the cabinet.

Whenever work is performed on the OPM, you should turn off the mushroom button before opening the OPM door. If the work is more involved than just cleaning the probe head, calibration plaque, or some very basic troubleshooting on the On-Press computer, then you should turn off the main power supply to the cabinet as well.

WARNING: The mushroom button on the outside of the cabinet should ALWAYS be OFF when closing the OPM door, to avoid rapid power cycling of the OP computer if the door opens and closes quickly and repeatedly on the safety door switch.

OPM Initialization

Following are the basic steps for OPM initialization:

- When an OPM starts up, the On-Press computer boots and will initialize the servo drives and probe heads.
- When power is first applied, there is an LED on each servo drive that will be red. Once the servos receive a command from the On-Press to initialize, this LED will turn green. (See figure below.)
- The first servo drive should move the probe head slightly toward the direction of the middle of the web (away from the servo drive), then abruptly stop and start moving back toward the servo drive (home).

- The probe head carriage will reach the near limit switch and stop, and then the servo drive will abruptly drive the probe head over the calibration plaque. Then the same procedure will occur on the other probe head.
- Then the first probe head will be positioned over the white tile and you should see some flashing light. The same will then happen for the other probe head.

That completes the OPM initialization process. If this does not happen, then the OPM is not ready to go and you will not be able to scan.

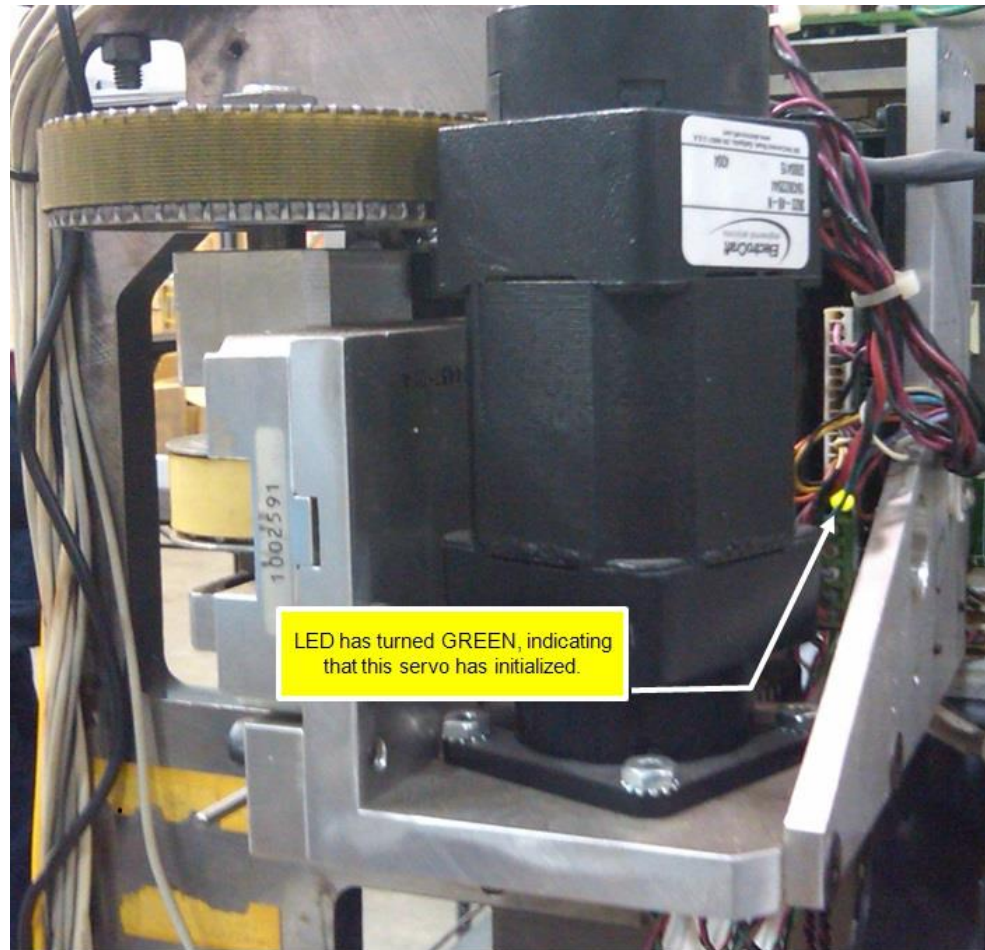
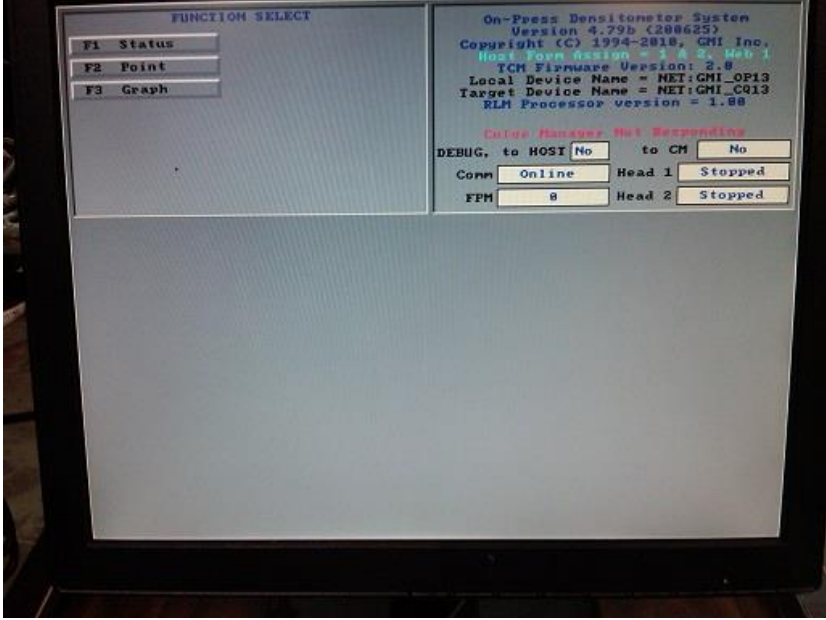


Figure 6.2: OPM Initialized

Troubleshoot OPM Initialization

There are several things that can go wrong with the OPM initialization. Following are some scenarios that include troubleshooting guidelines.

Scenario 1: Both Heads Never Move During Initialization

1	Check that there is actually power to the OPM.
2	Check that the power light on the On-Press power switch has turned green. (This light can sometimes burn out, so you may want to use an alternate method to determine that the computer has actually been turned on.)
3	Check that the LED lights on the servo drive amplifier boards turn red at power up. If so, then they are receiving power from the 24V supply. If not, check the output of the large 24V power supply. The output voltages are labeled on the power supply.
4	<p>Check that the LED lights on the servo drive amplifier boards turn green after a few minutes. If so, then they have been addressed by the On-Press computer. If not, the On-Press computer may not have booted completely or there may be some other problem.</p> <p>Connect a monitor to the VGA output of the On-Press computer and reboot. Observe that the computer completes the boot cycle and loads a program. You should see a GUI like the following:</p> 
5	If the above screen does not display (such as a black screen or a DOS prompt with possibly an error message), unplug all cables to the On-Press computer (except video and power) and try rebooting. If the computer still does not boot to the GUI, you have a problem with the On-Press computer.

<p>6</p>	<p>If the GUI does display after unplugging all of the cables, turn it back off and try plugging each cable back in, one at a time, rebooting after each cable connection. The recommended order of plugging cables back in would be:</p> <ol style="list-style-type: none"> 1) Ethernet cable 2) PSI cable (Round gray cable) 3) Servo Interconnect Cable (Black ribbon cable) 4) Hd1 Probe Head Cable (White ribbon cable) 5) Hd2 Probe Head Cable (White ribbon cable)
<p>7</p>	<p>If the On-Press computer fails to boot to the GUI at any point after plugging in one of the cables mentioned above, see the various sections located under Replacement Parts for information on troubleshooting that component.</p>
<p>8</p>	<p>If the GUI does display, but the heads do not move, refer to the upper right corner of the GUI and check the following items:</p> <ul style="list-style-type: none"> ➤ Check that there is a version. (The version you have may differ from the version shown here.) ➤ Check that there is a TCM version. Valid versions are 1.3, 1.9, and 2.0. If you see 0.0 then the TCM board may need reseating as it is not reporting a version. If reseating this board does not restore a TCM version, replace the On-Press computer. ➤ Check for any error messages in RED. In the example above, it shows that the Color Manager is not responding. If you see something else, such as “Running without camera, carriage or measurement components”, then there is a problem initializing one or more of the components in the OPM. Go back to Step 6 and see if you can locate the specific component failure.

Scenario 2: One Head Only Never Moves During Initialization

<p>1</p>	<p>Check that the LED light on the servo drive amplifier board turns red at power up. If not, you may have a problem with the servo drive, servo interconnect board, servo interconnect cable, or the servo driver board in the OP.</p> <p>Try swapping these parts with known good parts until you can find a faulty component. The recommended order of swapping these parts, based on probability of failure and assuming there is no visible damage to any of the components, would be:</p> <ol style="list-style-type: none"> 1) Servo Drive 2) Servo Interconnect Cable 3) OP Computer 4) Servo Interconnect Board
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2	<p>Check that the LED light on the servo drive amplifier board turns green after a few minutes. If not, you may have a problem with the servo drive or servo driver board in the OP.</p> <p>Try swapping these parts with known good parts. Recommended order of swapping these parts, based on probability of failure and assuming there is no visible damage to any of the components, would be:</p> <ol style="list-style-type: none"> 1) Servo Drive 2) OP Computer
3	<p>If the LED does turn green, but the head never moves, then you likely have a faulty servo drive. Replace with a known good servo drive. In rare cases, the fault may also be the OP computer. Replace that if the replacement servo drive did not solve the problem.</p>
4	<p>If none of the above steps resolve the issue of one head not moving during initialization, you may have a faulty beam limit switch or limit switch harness. Refer to Limit Switches for information on troubleshooting limit switches.</p>

Scenario 3: Head Moves Slowly Outward Toward Web Only

If a head moves slowly outward and it never starts to move toward the servo drive end (toward you), then the likely problem is the home limit switch. Refer to [Limit Switches](#) for information on troubleshooting limit switches.

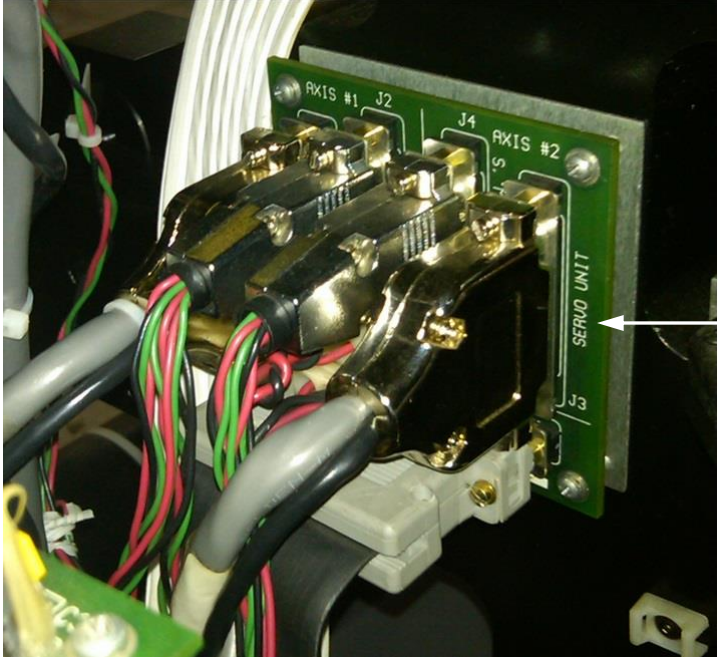
Scenario 4: Head Moves Slowly Inward, Never Moving Away From You

If a head moves slowly outward and it never makes a move toward the web (away from you), then the likely problem is the far limit switch located at the far end of the beam. Refer to [Limit Switches](#) for information on troubleshooting limit switches.

Scenario 5: One or Both Heads Start to Initiate (One May Shoot Out Across Web)

1	<p>If one or both heads start to initiate after replacing the OP computer, you may have an incompatible On-Press computer. Verify with AVT Service on the compatible model numbers. Have your system number, On-Press model numbers, and software revisions handy before calling.</p>
2	<p>There may be a bad limit switch or shorted limit switch harness. Try disconnecting the black ribbon cable from the On-Press computer and reboot.</p> <p>Note: Be ready to turn off OP computer quickly, if necessary.</p> <p>If heads do not shoot out over web, but try to return home as they normally would, you likely have a bad limit switch or shorted limit switch harness. Refer to Limit Switches for information on troubleshooting limit switches.</p>
3	<p>If the heads still shoot out across the web with the black ribbon cable disconnected, then there may be a problem with the servo drive itself. Try changing the suspect servo drive with another known good servo drive.</p>

Alternate Method to Troubleshoot OPM Initialization

<p>1</p>	<p>You can swap the connections for the servo and limit switches at the servo interconnect board on the back wall of the OP Module.</p>  <p>servo interconnect board</p>
<p>2</p>	<p>You must then swap the white ribbon cables at the On-Press computer.</p>
<p>3</p>	<p>You must then modify the autoexec.bat file on the root drive of the On-Press computer. On the last line it will either say "STD_SERVO" or "REV_SERVO". Whichever your batch file states, you must change this argument to the alternate one. Once this is done, the lower servo, limit switches, and probe head are being operated by the upper channel of the OP computer.</p> <p>If your failure moves to the opposite beam, then the problem is from the interconnect board, the OP computer, or the interconnecting cable between the two.</p>

IMPORTANT: The servo drive cable and limit switch cable must **ALWAYS** be connected with the same axis on the interconnect board to avoid damage to the system.

Replace On-Press Computer

WARNING: Only trained personnel should service the On-Press unit parts.

WARNING: Turn **OFF** all power to the On-Press unit before servicing.

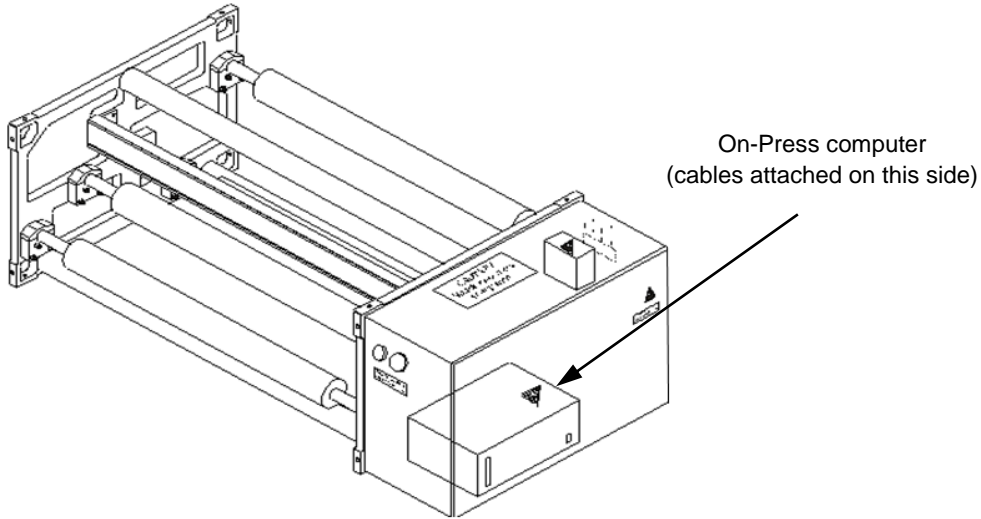

1	Turn power OFF by tripping the dedicated breaker for the On-Press unit.
2	Open the On-Press enclosure door and turn the computer's power switch to OFF .
3	Lift the computer gently out of the enclosure so that the nearest legs of the chassis are outside the enclosure. Disconnect all cables. Remove computer completely from the enclosure and place it aside.
4	Lift the replacement computer into the On-Press enclosure, so that the nearest legs of the chassis are outside the enclosure.
5	Connect cables to the new computer and secure with the attached screws.
6	Lift the computer and gently set it completely within the enclosure. Make sure all cables are clear of any On-Press moving parts.
7	Plug in power cord that runs between the isolation transformer and computer. 

Figure 6.3: On-Press Unit and Computer

<p>8</p>	<p>Remove the compact flash from the old unit (as shown in the figure below) and install it into the new unit.</p> <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">Compact Flash</div>  </div> <p style="text-align: center;">Figure 6.4: On-Press Computer with Compact Flash</p>
<p>9</p>	<p>Turn on the computer power switch and close the enclosure door.</p>

Issues When Replacing On-Press Computer

The compact flash could be defective. However, this is very unlikely because AVT provides a special type of compact flash that is extremely reliable. If the new unit doesn't behave correctly, contact AVT Customer Service.

Note: *Service Note 398* provides steps for rescuing a compact flash card.

6.4 Scan Head

WARNING: Only trained personnel should service any of the On-Press unit parts, including the scan head.

WARNING: Before servicing, turn OFF all power to the On-Press unit.

WARNING: Do not service the scan head while the press is running.

<p>1</p>	<p>Turn the power to the On-Press unit OFF using the power safety switch. Be sure the press is not running.</p>
<p>2</p>	<p>Open enclosure door and gently push the scan head to the middle of the rail.</p>

<p>3</p>	<p>Remove the screws, one on each side of the scan head, using a 9/64" Allen wrench.</p> <div data-bbox="553 296 1252 726" data-label="Image"> </div> <p style="text-align: center;">Figure 6.5: Scan Head</p>
<p>4</p>	<p>Attach the new scan head to the mount. Be sure to line up the posts with the holes in the mount and seat the pins in the communication port without bending them.</p>
<p>5</p>	<p>Use Loctite 222 or 242 on the screws, and tighten to 25 in-lb of torque. Be sure the head is flush to the mounting bracket, not angled up or down.</p> <div data-bbox="407 1031 1317 1367" data-label="Image"> </div> <p style="text-align: center;">Figure 6.6: Scan Head and Scan Head Mount</p>
<p>6</p>	<p>Gently move the scan head back to the home position in the enclosure and then back out again along the rail, to be sure it has unobstructed movement.</p>
<p>7</p>	<p>Close the enclosure door and restore power to the On-Press unit.</p>
<p>8</p>	<p>Perform the Head Alignment Test. See <i>Service Note 208</i> for the complete head replacement procedure.</p>

6.5 Press Signal Interface

WARNING: Only trained personnel should service the On-Press unit parts.

WARNING: Before servicing, turn OFF all power to the On-Press unit.

The Press Signal Interface (PSI) connects to the encoders, the press event sensors, and the On-Press computer.

PSI Board

The PSI board receives signals from the press and sends these messages to the On-Press computer via the PSI cable. The PSI cable plugs into the TCM board on the On-Press computer. The PSI is a silver box typically located on one of OPM side walls.

Signals received at the PSI board include the encoder signal and press event signals, such as blanket wash, splice, impression on, and a spare that is used for various reasons based on your purchased options. (The spare may not be used at all.)

There are two generations of the PSI board. There is the PSI I and the PSI II. The PSI I is the original version and is still used unless a specific installation requires the PSI II.

- The PSI I version is about 3 ½" x 4 ½".
- The PSI II version measures about 3 ½" x 9".

The encoder feed to the PSI may come from Hall Effect sensors or it may come from a digital encoder. The type of encoder signal defines how the encoder signal is connected. The section on [Encoder Signal Types](#) will cover some typical connections.

There are three connectors on the PSI I board (as seen on this PSI board layout) that all deal with the encoder signal. These are:

- A channel
- B channel
- impression pulse

While an impression pulse is not always utilized, the A and B channels are always used at a minimum.

These A and B connectors are the two that are side by side.

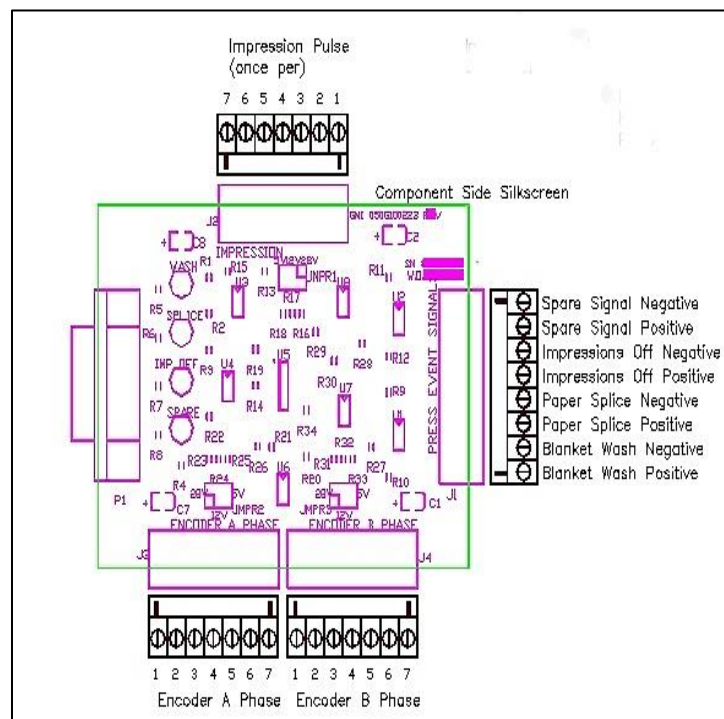


Figure 6.7: PSI Board Layout

The press event signals are typically isolated via Red Lion converters. The actual Red Lion converter used depends on the input voltage of the press signal. Most press signals are 24VDC, but installations do sometimes differ. The connector on the top of the PSI is where the press signals are connected after they are buffered by the Red Lion converters.

Press Event Signals on PSI Board

If you do not have a multimeter and are in doubt about whether or not a press event signal is occurring, you can remove the cover of the PSI board. There are 4 LEDs under the cover. The LEDs do not line up with the input, so this can be confusing.

When a press event is active, the LED will light up. Typically, all signals are normally low except the impression off which is normally high (though not always). So when the press is running production and no event is occurring, the impression off LED is normally lit with all other LEDs off until that event occurs. For example, when a blanket wash occurs the blanket wash LED should light up, even if momentarily.

Sometimes these press event signals remain high during the entire event. The duration of the signal is determined by the press manufacturer or the electrician that set up the signal on the press side at the time of installation. There are, of course, exceptions. AVT Tech Support will not be able to help you determine what type of signal was originally installed or the duration of a signal, as this information is not tracked from the original installation.

Changes to these signals from the press side can negatively affect system function and/or performance, so those types of changes should be carefully considered before being implemented.

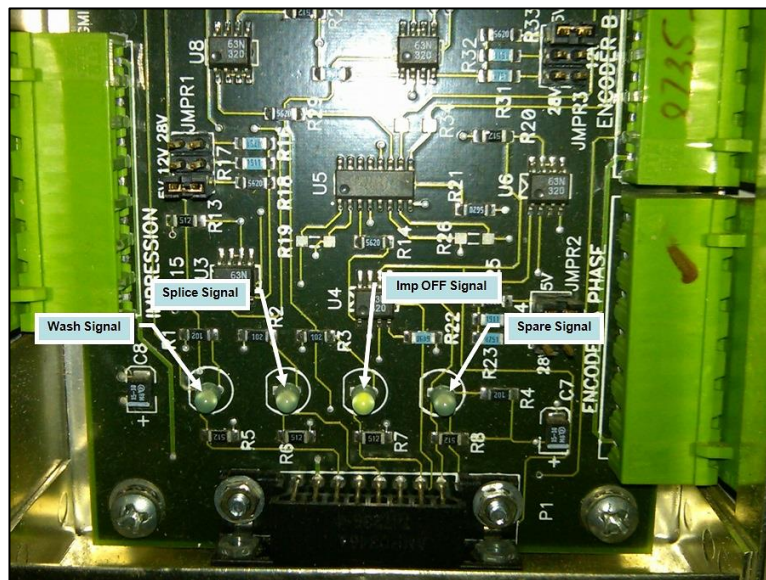
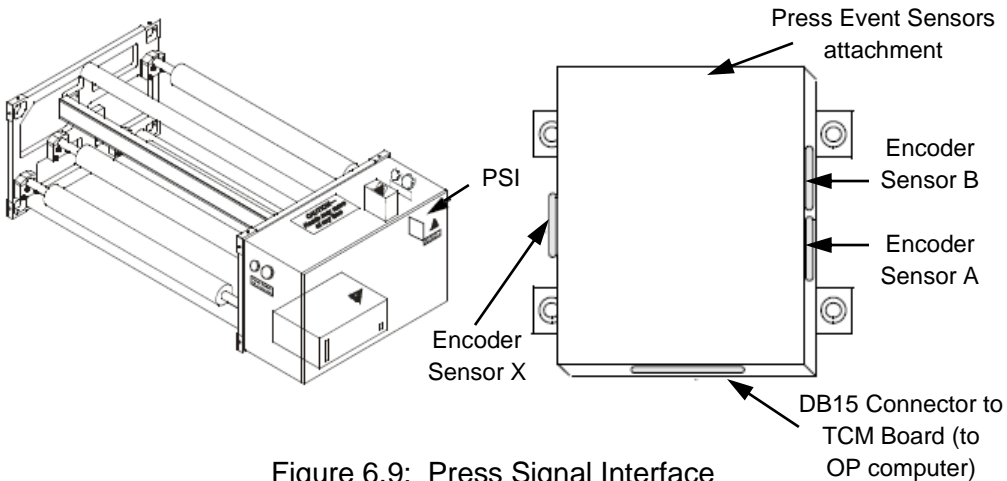


Figure 6.8: PSI Board

If a press event signal is in question, use a voltmeter to measure the input voltage at the Red Lion converter as well as the output voltage of the Red Lion. Replace the Red Lion if found to be defective, but be sure to replace with the same part number as there are several Red Lion converters and they all look the same physically.

Replace the Press Signal Interface

1	Be sure all power to the On-Press unit is off.
2	Open the door to the On-Press unit. The PSI is bolted to the right side of the enclosure.
3	Note the location of all cables connected to the PSI, then detach.
4	Remove the PSI by removing the nuts with a 7/16" wrench. Set the PSI aside.
5	Connect all cables (two encoders, the TCM cable to the On-Press computer, and the press event sensors) to the replacement PSI.
6	Attach the PSI to the enclosure wall. Use Loctite 222 or 242 and tighten the nuts to 100 in-lbs.
7	<p>Close the On-Press unit door and power up the system.</p>  <p style="text-align: center;">Figure 6.9: Press Signal Interface</p>

6.6 Quadrature Encoder Assembly

WARNING: Only trained personnel should service the On-Press unit parts.

WARNING: Before servicing, turn OFF all power to the On-Press unit.

WARNING: Do not service the encoder when the press is running.

The encoder signal is the heartbeat of the Clarios system. Any problem with the encoder signal will manifest itself in incorrect scanning, which can in turn lead to over inking or under inking issues or other undesirable behavior.

The Clarios system encoder specifications require that the uniformity of the encoder pulse signal not exceed $\pm 1.5\%$ variation of any individual encoder pulse period with respect to the average period for all of the encoder pulses that occur within one impression. Any variation above this specified limit results in the possibility of unacceptable measurement timing errors and incorrect measurement data.

If the encoder pulses are not uniform, the same number of encoder indexes that span the distance between the camera and measurement events **may not span the same elapsed time as would uniform pulses**. This disparity introduces an error in the corrected measurement location, based on target area location information determined from the camera image and may result in an incorrect measurement, as detailed in the figure below.

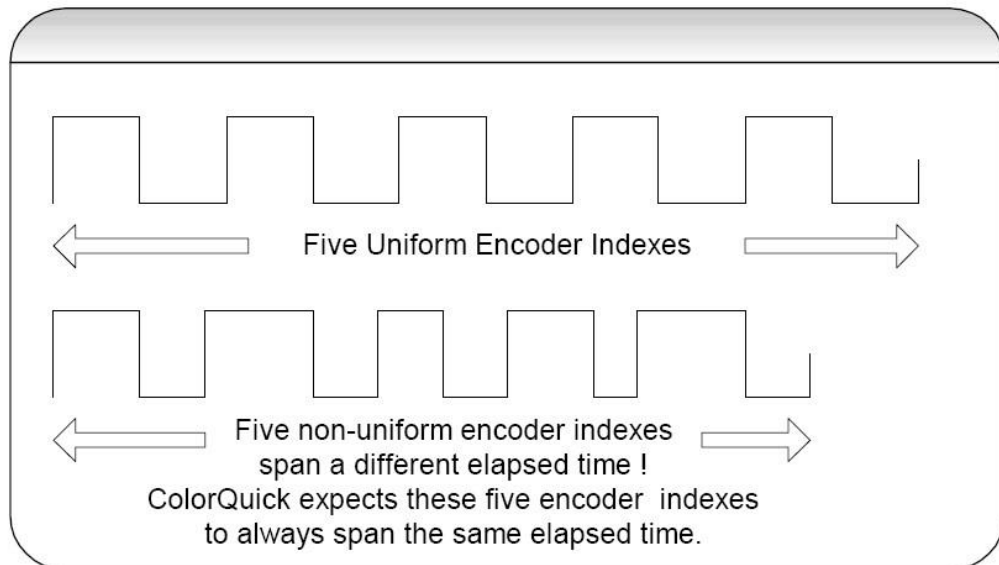


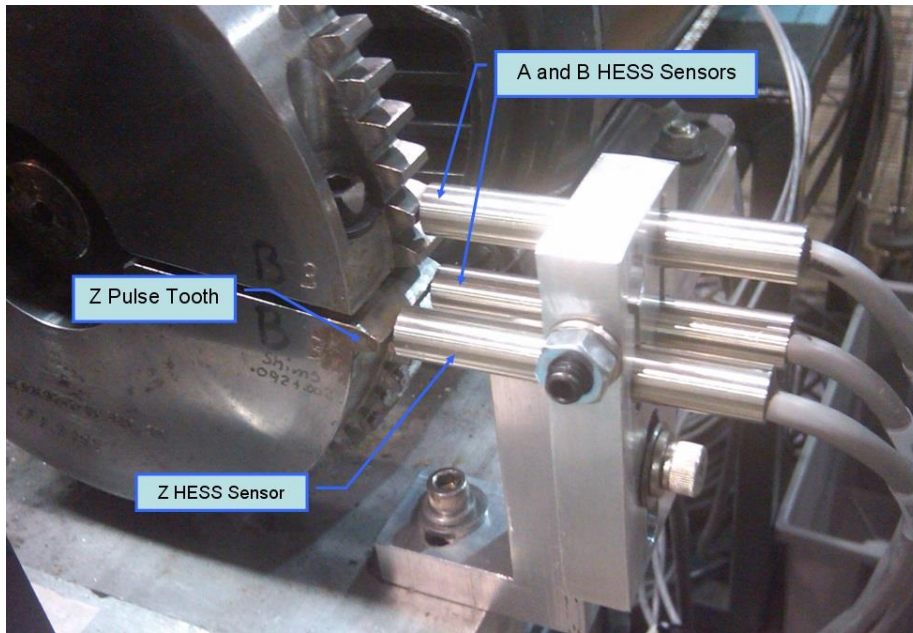
Figure 6.10: Encoder Variation Chart

Independent measurement and verification of encoder uniformity can be performed with any instrumentation capable of measuring the period of sequential encoder pulses for the duration of the printing impression. The individual encoder period measurements are then compared to the average encoder period for one printing impression.

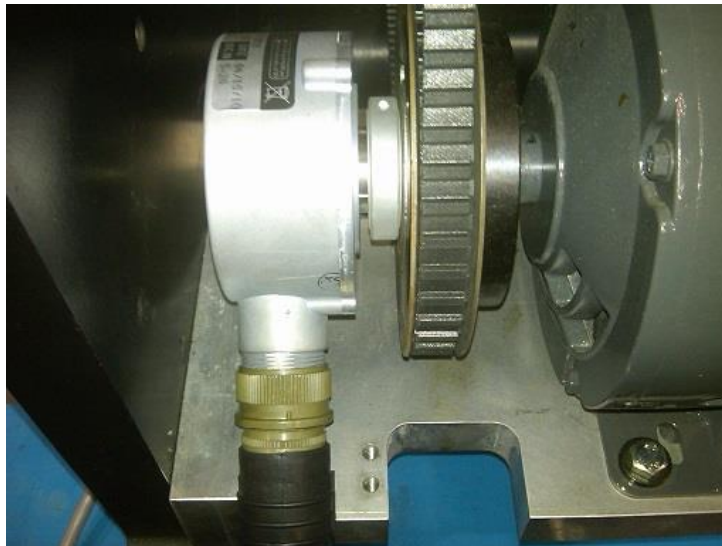
Encoder Signal Types

There are several different ways that encoder signals may be obtained on the press for your Clarios system. In all cases, the encoder signal is supplied to the PSI board.

Hall Effect Sensors on an AVT supplied gear. (Not all versions have a Z sensor.)



Digital Encoder (such as a BEI) supplied by either AVT or the press manufacturer.



Digital input from press drive (again supplied by press manufacturer). Can connect from multiplier board, BEI Isolator module, or some other press defined connection.

Split Gears

AVT supplied split gears should NOT be moved from their location, nor should the bolts ever be loosened. Doing so may cause your system to be unstable or completely unusable.

The gap distance between the two halves was adjusted during the installation of the system using tests in the system only available to the installer. Initially, the gaps must be within .002 of each other. Further fine tuning was done during installation. If you need to move or remove the split gear from its original location, contact AVT Service.

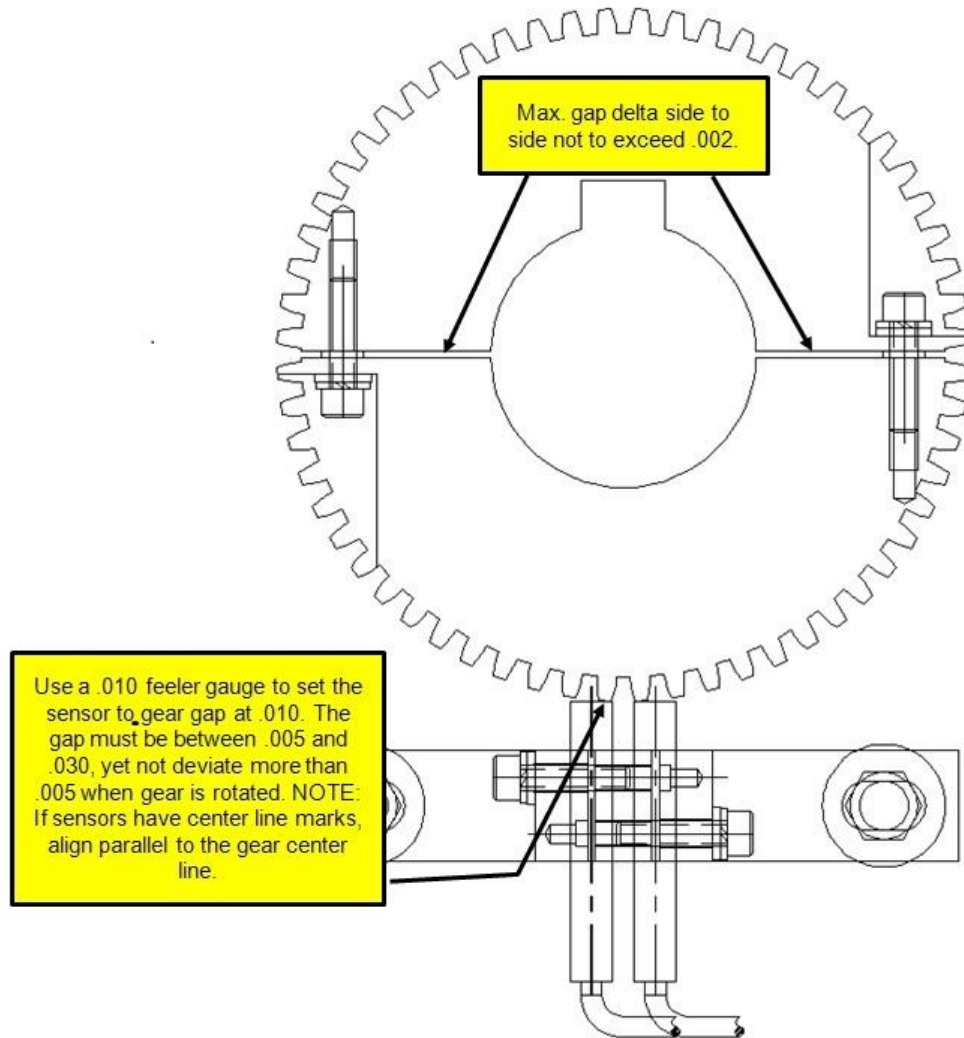


Figure 6.11: Split Gears

PSI Board Connections

Both “A” and “B” encoder inputs to the PSI board must be working for the speed signal and impression count to work correctly. Normally phase A is used for direction sensing and phase B is used for speed reference.

If phase A is not working, it may not be immediately apparent since the speed and impression count at the Clarios host will still work correctly. The system will take longer to find the colorbar after press stoppages where the press has been moved in reverse.

If phase B is not working, you will not get any speed or impression count. If phase A is not working, but phase B is, you may or may not get an impression count; you will get a speed indication.

If phase A and B are connected to the PSI board in reverse the speed signal will work, but the impressions will not increment.

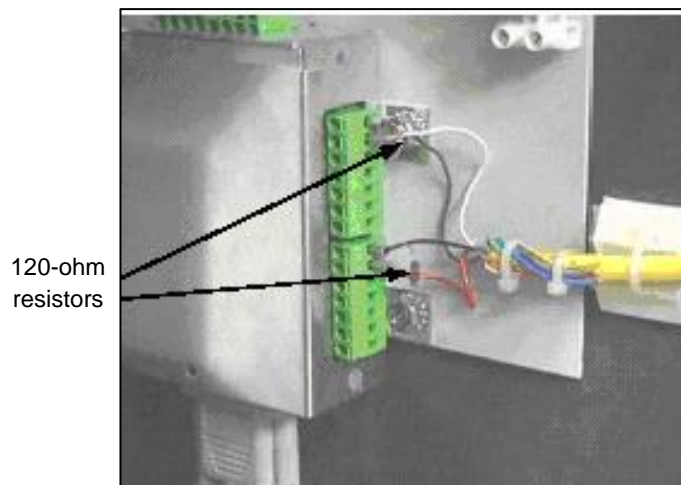
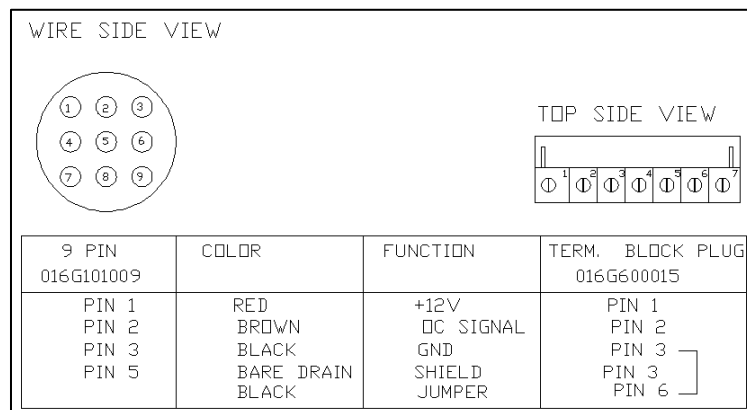


Figure 6.12: Encoder Connections on PSI Board



Notes:

- Before any swapping of cables or connectors on the PSI board, remember to turn the power OFF. Failure to do so will cause permanent damage to the PSI board and / or TCM board.
- Built up grease in the gear teeth should be cleaned out.

Digital Encoder Signals

Encoder signals are sometimes provided as a digital signal from the press. This can be a digital encoder mounted somewhere on the press or it may be a digital signal provided from the press drive system.

In either case, the troubleshooting is largely the same as used for the Hess Sensors. It is still important that the supply voltages to the PSI board are present, but these voltages are NOT sent to the digital encoder as they are with the Hess sensors.

Normally, the digital signal arrives to the PSI board in the form of 2 wires per phase. The wires are connected to pin 6 (positive) and pin 7 (negative). These two wires “may” have a resistor connected between them at the PSI connector. You can check the resistor with a meter, but you must completely disconnect it from the circuit to do so. If the resistor has failed, it is possible that the entire PSI board has failed as well.

Encoder Inputs Monitoring

Using an oscilloscope, monitor the incoming signals with Phase A connected to the A channel of the scope and Phase B connected to the B channel of the scope. It is important that the two phases are approximately 90 degrees out of phase with each other, as shown in figure below.

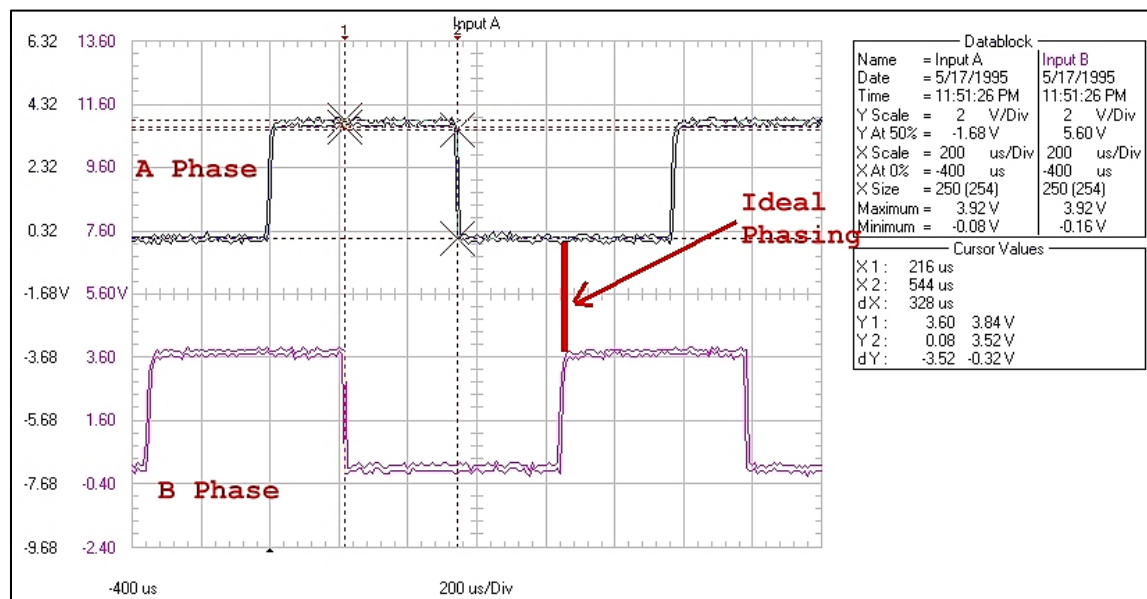


Figure 6.13: Encoder Input Monitoring

If this phasing changes to the point that their rise cross each other, it can cause the On-Press computer to sense that condition as a change in direction and scanning will be aborted and the impression count at the host will stop incrementing.

BEI Isolator Modules

In many cases of a digital encoder signal, a BEI Isolation module is supplied to buffer the encoder signals to the PSI board.

This module electrically isolates the input and output voltages while maintaining signal accuracy.

Check the inputs and outputs of this module as well. Not all isolator modules are the same, so be sure to obtain the exact model number before ordering a replacement.



BEI Isolator

Encoder Divide Module (EDM)

With some digital encoder interfaces, the signal supplies too high a frequency and needs to be divided down to be usable by the TCM board in the On-Press computer. (The maximum TCM frequency for the TCM board is 96K and can be calculated by taking the number of pulses per cutoff and multiplying by the max speed in IPH.) The EDM accomplishes this by dividing down the incoming signal.

The EDM (if you have one) is supplied as part of the cable between the PSI board and the OP computer. It is a black box in the middle of the cable.

If the EDM was not required as part of the original installation, then one was not supplied and you only have a cable between the PSI and the On-Press computer.



Encoder Divide Module

The EDM is programmable. Your existing EDM was programmed at installation, but if you get a replacement you may need to set it up. Under the round plastic cap is a bank of DIP switches. The EDM is only capable of dividing the incoming signal by 2, 4, 8, or 16. Below is a chart that explains the settings for the various divisions.

DIPSWITCH CONFIGURATION						
Divide By	SW-1	SW-2	SW-3	SW-4	SW-5-8	
2	ON	OFF	OFF	OFF	OFF	
4	OFF	ON	OFF	OFF	OFF	
8 (default)	OFF	OFF	ON	OFF	OFF	
16	OFF	OFF	OFF	ON	OFF	

If you have an EDM and all your encoder troubleshooting steps have failed to this point, obtain a straight through cable to install between the PSI and the OP computer. If you now get a very high press speed indicated, then you likely have a faulty EDM.

Impression Pulse (“Z” Pulse)

In some cases, an impression pulse may be provided. This is always the case with a digital signal, but it is not always the case with a Hess sensor.

If your TCM version is 1.9 or above, the impression pulse connector, *if not used*, should have a jumper between pin 3 and 6. This is because v1.9 or above TCM revisions could pick up noise and falsely interpret it as an impression pulse. This could lead to aborted scans, long locate times, etc.

When the impression pulse is used, one pulse is used per impression size to help assist with colorbar locate by calculating the offset between the pulse and the actual location of the colorbar. If you think that this pulse is causing a problem with locate time, etc., disconnect it and install the aforementioned jumper wire as a test. This impression pulse has nothing to do with speed or impression count.

The impression pulse may come from the Z pulse of a digital encoder or it may be provided as a third Hess sensor in the case of the Hess Sensor gear type encoders.

Run on One Sensor

When there is no FPM and no impression count increase when the system is told to scan, one of the sensors on the gear encoder has likely gone bad.

To get the encoder working correctly you can get the system to use only one sensor. Since you initially don't know which one is failing it may take some parts or connection swapping.

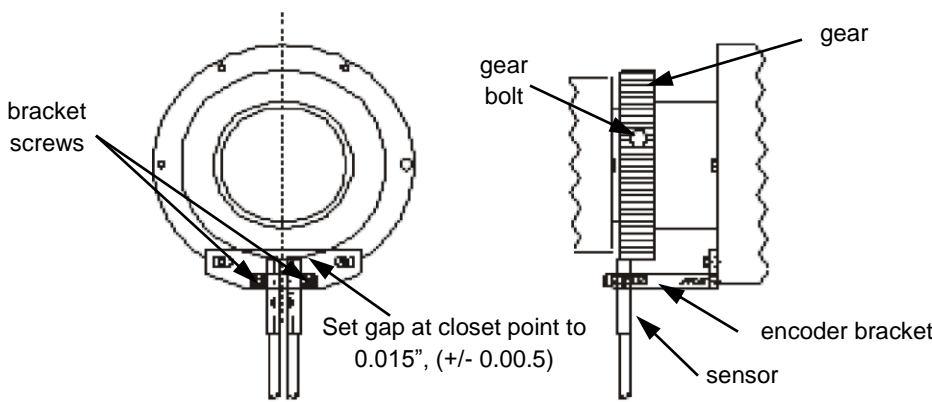
1	<ul style="list-style-type: none">a) End any job you are scanning.b) Turn off the power to the On-Press by pressing the red (or yellow) stop button on the side of the On-Press.c) Remove the brown wire from pin 2 of the Encoder A Phase.d) Make sure the bare wire is insulated since it will have power when the On-Press is turned back on.e) Make sure the jumper wire from pin 3 to pin 6 remains connected.
2	<ul style="list-style-type: none">a) Turn the On-Press power back on.b) Create a new test job.c) With the press running, verify the FPM is working.d) With the press running, verify the impression count is changing.
3	Repeat step 1 and step 2.

- If you have identified one sensor as the failure, check the termination at the PSI board connector and the AMP connector at the gear end of the cable.
- Also check pins and termination of the AMP connector of the failing sensor.
- No impression count from either sensor may indicate a mechanical problem at the gear location.

- Check to make sure that both Hess sensors are gapped to .010" from the encoder gear and that they are both centered over the gear teeth.
- If you still do not get an impression count from either sensor, the supply voltage may be the problem. Use a voltmeter and measure the voltage at pins 1 and 3 of each phase at the PSI board. Pin 3 is ground and pin 1 is 12V+. If you do not get any voltage here check the cable from the PSI board to the On-Press computer and make sure that is connect securely. If you still do not have power, open the On-Press computer and check output voltages of the power supply, as this is where the power for the PSI board originates.

Replace Encoder Sensors

The encoder is mounted on the press and returns information on press speed and direction of paper travel. Each encoder assembly is mounted depending on the unique press configuration, but the replacement procedure is common to all presses.

1	Be sure the press is not running and power to the On-Press unit is off.
2	Loosen screws on encoder bracket, then remove the sensors from bracket.
3	Detach the cables from the sensors and set the sensors aside. Note: Before detaching, mark the cables if they are not identified.
4	Attach the replacement sensors to the cables.
5	<p>Insert the replacement sensors into the encoder bracket. Use an oscilloscope to phase the encoders 90° apart. If there is a bolt in the gear, offset the sensors so that they read only the teeth of the gear all the way around and not the gap made by the bolt.</p> 
6	The gap between the sensors and the gear must be set at the closest point to 0.015", +/-0.005". Use a feeler gauge to set and check the gap. Check the entire gear while jogging the press.
7	Tighten screws on the encoder bracket. Use Loctite 222 or 242 on the screws.

6.7 Calibration Cover

WARNING: Only trained personnel should service the On-Press unit parts, including the scan head.

WARNING: Before servicing, turn OFF all power to the On-Press unit.

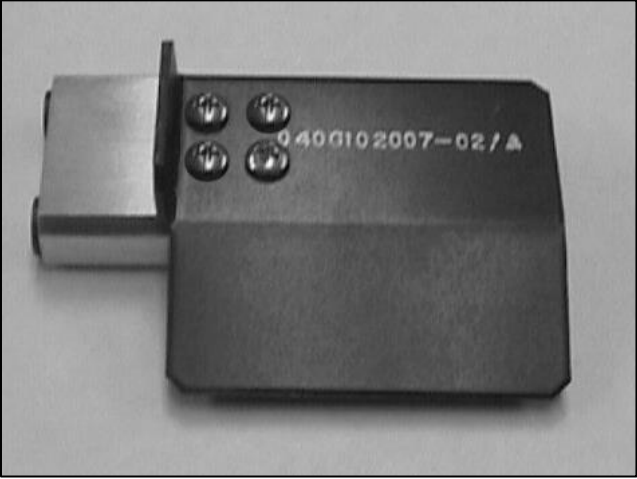
1	Turn off the power to the On-Press module.
2	Move the scan head out of the way by gently pushing it along the rail.
3	Detach the spring from the posts beneath the calibration holder. Slide the cover off the end of the two shafts.
4	<p>Slide the new cover along the shafts and attach the spring to the posts beneath the calibration holder. Be sure the calibration cover slides easily along the shafts and that it covers the calibration plaques and black hole.</p> <div data-bbox="597 800 1230 1276" data-label="Image">A black, rectangular calibration cover with a hinged lid on the left side. The lid is open, revealing four screws arranged in a 2x2 grid. The part number '0400102007-02/A' is printed on the top surface of the cover. The cover is shown against a light gray background.</div>

Figure 6.15: Calibration Cover

6.8 Roller Guards

WARNING: Only trained personnel should service the On-Press unit parts.

WARNING: Before servicing, turn OFF all power to the On-Press unit.

WARNING: Do not service the roller guards while the press is running.

Some models of the Clarios On-Press module may have roller guards. They are a safety feature, designed to protect the hands from being crushed between the scan head and the measure roller as the scan head moves out of the enclosure.

There are roller guards for the 4-inch rollers (P/N 040G101932) and 8-inch rollers (P/N 040G101933).

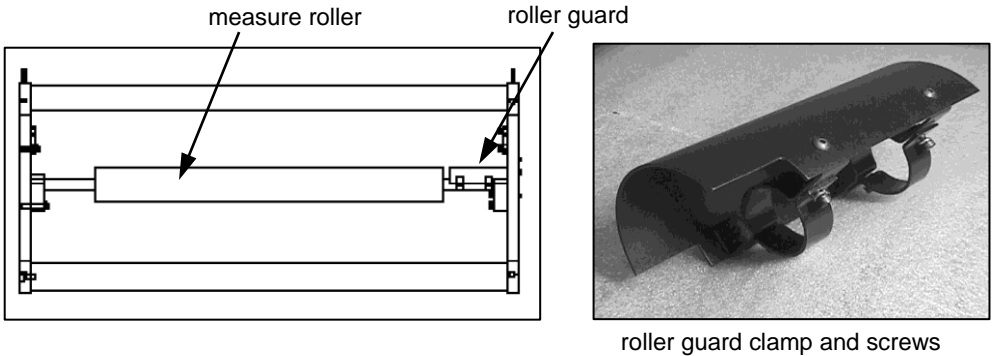
1	Be sure all power to the On-Press unit is off.
2	Loosen the four roller guard clamp screws using a 9/64" Allen wrench, and remove the clamps.
3	Remove the roller guard and set it aside.
4	Put the replacement roller guard in place, making sure it is seated properly against the roller bracket and the end frame. It should be clear of the roller.
5	Replace the clamp screws. Use Loctite 222 or 242 on the screws and torque them to 25 in-lb.  <p>The diagram shows a side view of the roller guard assembly. A horizontal roller is labeled 'measure roller'. Above it is a curved 'roller guard'. The guard is held in place by four screws on each side. A photograph to the right shows the 'roller guard clamp and screws' as a separate component.</p>

Figure 6.16: Roller Guard

6.9 Idler and Measure Rollers

WARNING: Only trained personnel should service the On-Press unit parts.

WARNING: Before servicing, turn OFF all power to On-Press unit.

WARNING: Do not service the rollers while the press is running.

Idler and measure rollers are the free-turning rollers that guide the web as it passes through the On-Press unit.

Note: Rollers are trammed from the factory and should not need adjusting when servicing idler roller bearings.

The scan head moves across the paper as the paper passes over the measure rollers. Idler rollers help route the web to other press components.

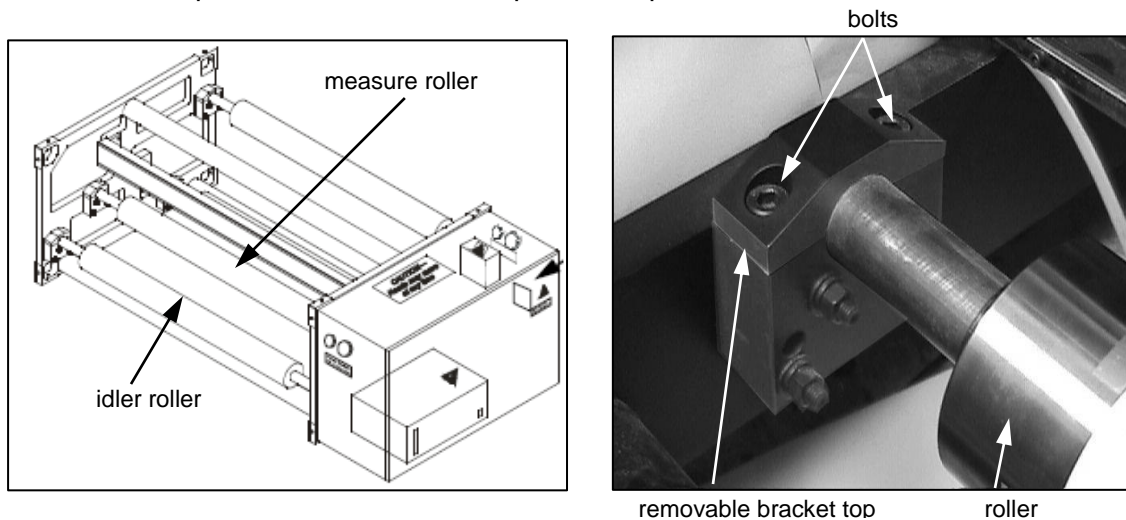


Figure 6.17: Idler Rollers

1	Remove roller guard.
2	Remove the mounting bolts from the roller bracket at each end of the roller. Use a 3/8" Allen wrench. Remove the top of the brackets.
3	Lift out the roller and set it aside. Insert the replacement roller, being careful not to scratch it.
4	Replace the tops of the brackets. Insert the bolts. Use Loctite 242 on the bolts and torque them to 106 ft-lbs.
5	Replace the roller guard, using Loctite 222 or 242 on the screws and tightening the screws to 25 in-lbs.
6	When replacing a measure roller, AVT-trained personnel should align the beams using the Clarios Beam Alignment Kit, AVT P/N 090G900107.

6.10 Servo Drive Assembly

WARNING: Only trained personnel should service the On-Press unit parts.

WARNING: Before servicing, turn OFF all power to the On-Press unit.

What You'll Need	
Loctite 222 or 242	AVT P/N 037G200034
Torque wrench 30-250 in-lb.	AVT P/N 039G200101
Wrench 3/16 long Allen 3/8 socket drive	AVT P/N 039G200037

Remove Servo Drive Assembly

1	Turn off power to the On-Press unit by tripping the dedicated breaker switch and turning off the power switch on the On-Press unit. Open the cabinet door.
2	Disconnect the servo assembly cable from the servo interconnect board on the end frame.
3	Loosen the two servo assembly mounting screws. They are located on the drive housing between the servo motor and the servo amp card.
4	Pull back on the servo drive assembly to compress the tensioning springs. Slide the drive belt off the sprocket. WARNING: Do not pull on the servo motor or servo amp card. Grip the assembly from the bottom.
5	After the belt is removed, remove the mounting bolts and remove the assembly from the On-Press unit.

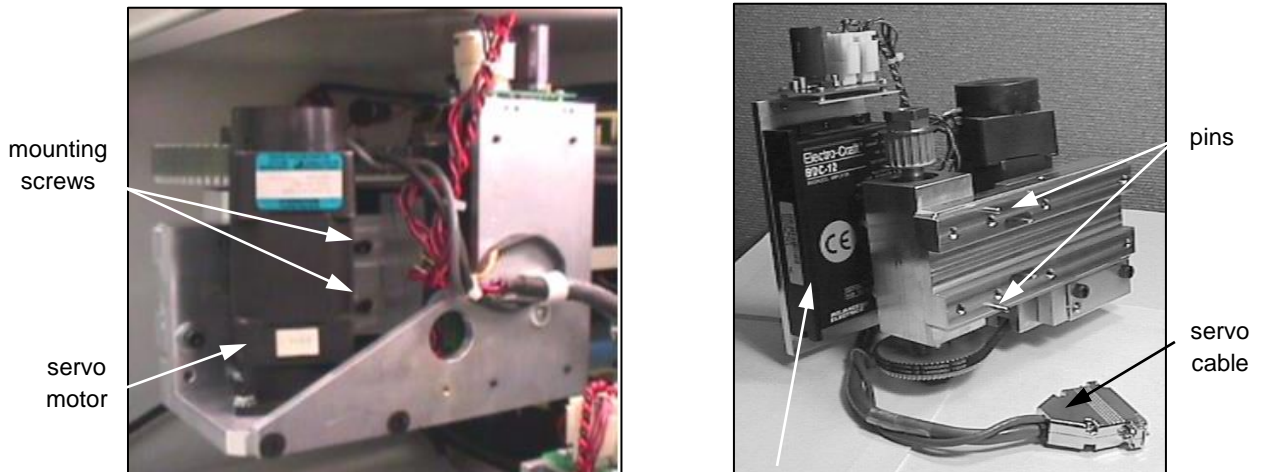


Figure 6.18: Servo Drive Assembly

Replace Servo Drive Assembly

1	Locate the two 1/8" pins on the back of the servo assembly bracket. These pins line up with two slots on the drive housing.
2	Line up the two 1/8" pins with the breakout at the end of the slots on the drive housing. Pull back on the servo drive assembly to compress the tensioning springs in the slots. WARNING: Do not pull on the motor or servo amp card. Grip the assembly from the bottom.
3	Put Loctite on the two mounting screws (1/4-20 x 1-1/2 SKTH). Install the screws with a washer and a split washer, but do not tighten. You have 10 minutes before the Loctite sets.
4	Again pull back on the servo assembly. Slide the drive belt onto the sprocket. Be sure the belt and the sprocket grooves line up. WARNING: Do not roll the belt onto the sprocket. This tears the belt cords and causes belt failure.
5	Be sure the servo drive assembly fits flush to the drive housing, not angled up or down.
6	Let the springs tension the belt. A slight jiggle of the assembly will help seat the assembly.
7	Torque the two mounting screws, installed in Step 3, to 101 in-lbs.
8	Connect the servo cable into the servo interconnect board on the end frame. Be sure to secure with screws.

Test Servo Drive Assembly

1	Slowly slide the scan head out of its home position and check that all belts ride smoothly in their sprockets.
2	Return the scan head to its home position again, while watching the belts.
3	Close the enclosure door and power up the system.

6.11 Probe Head Carriages

Probe head carriages have a set of V-wheels that ride on V-rails on the beam. In very early versions of the carriages, they contained two V-wheels at the top and on the bottom there was a sliding block mounted on a spring loaded arm that rode on the bottom V-rail. These are now obsolete.

Current versions of the carriages have three V-wheels, two at the top and one mounted on the spring loaded arm at the bottom.

The only maintenance required for the carriages is to keep the V-rails and V-wheels clean and lightly lubricated. These should be lubricated with lightweight machine oil, such as 3-in-1 Oil, etc. Oil is only required on the surfaces of the V-wheels and V-rails, as the V-wheels and arm have permanently sealed bearings. Use a rag to apply a thin coat of oil to the rails. See red arrows in figure below for oiling points on the carriage.

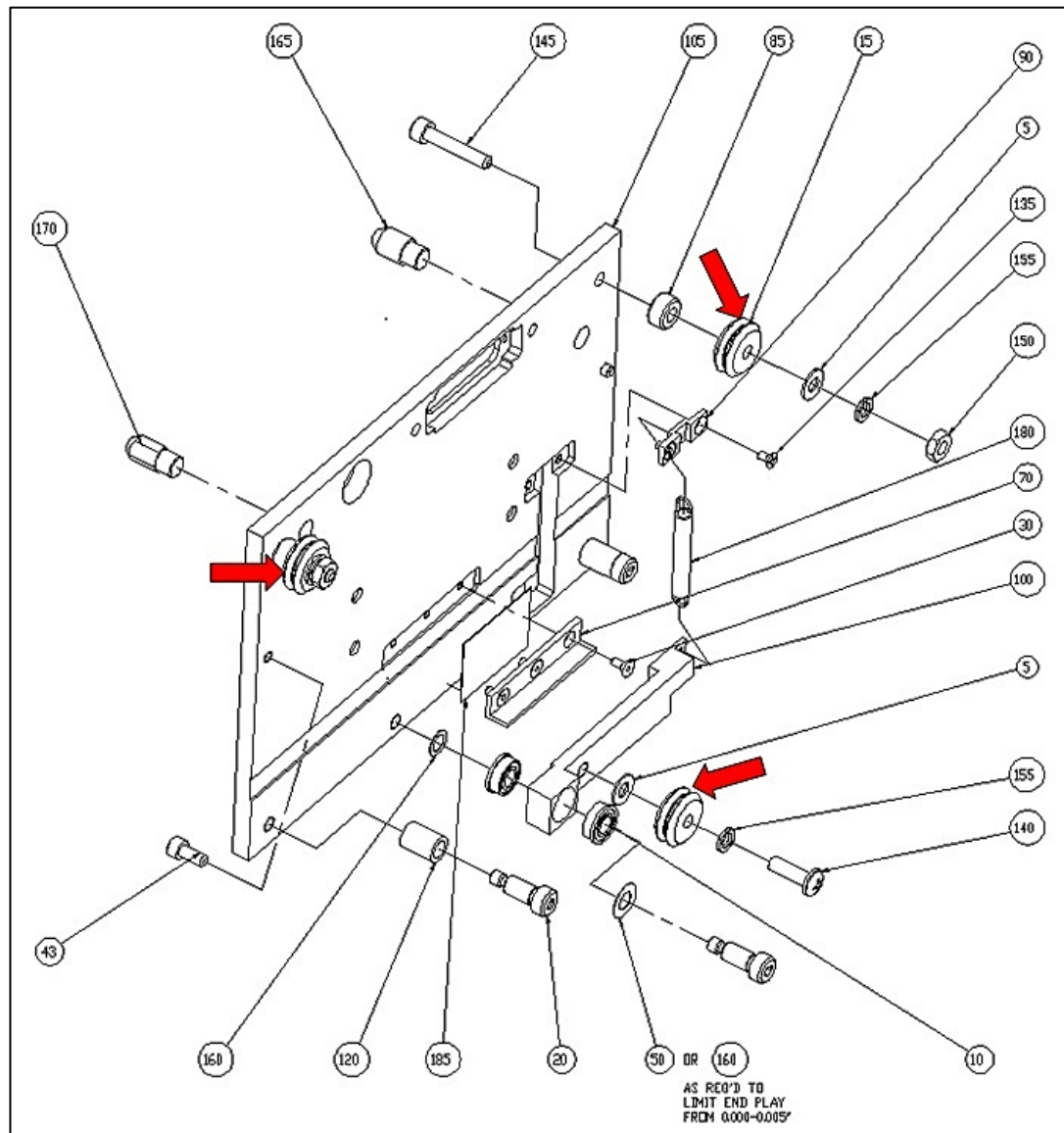


Figure 6.19: Probe Head Carriages

6.12 White Ribbon Cables

The white ribbon cables carry all of the power and data between the On-Press computer and probe heads. They are mounted in a flexible track called an “energy chain”. These white ribbon cables are quite flexible, but they can wear out over time and can be damaged quite easily as well. If the cable is suspect, you can “ring out” the connections with a multimeter, but sometimes a broken conductor in the ribbon cable may only show an open (or short) when the ribbon is in a certain position of flex.

Where the cable connects to the On-Press computer, there is a special sliding clip on the connector that creates a lock of the connector onto the card in the On-Press computer. This ensures that the cable does not come loose during system operation. The clip must be slid before removing the cable and then slid back into position after the cable is reconnected.

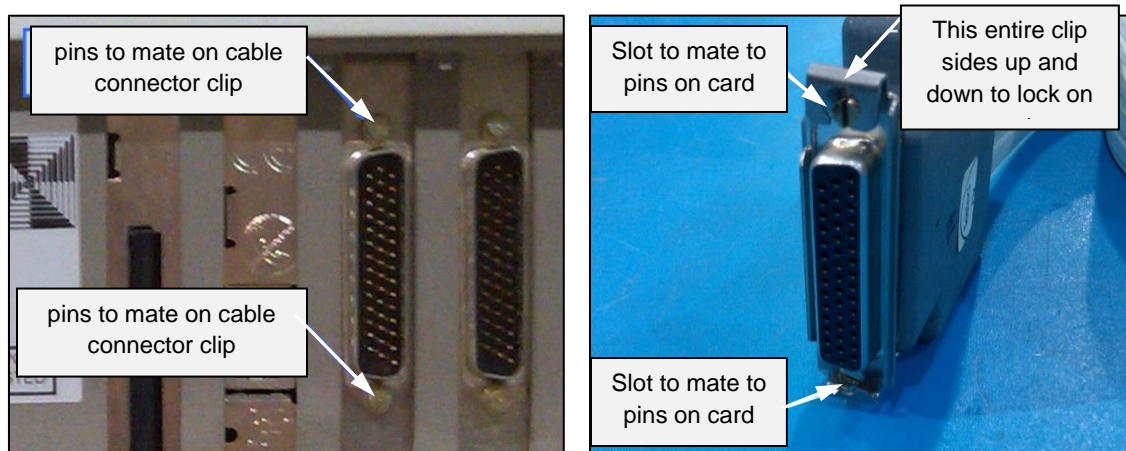


Figure 6.20: White Ribbon Connections

There are several different lengths of white ribbon cables. They are specific to the size of the OPM and the beam length for your system. Contact AVT Parts/Tech Support with your system number, to ensure that you order the proper cable.

Probe Head Cable Assembly

The end-to-end connection of this cable is straight thru one-to-one. However, some conductors are not used. If you decide to check continuity, the table of conductors used is shown below.

PROBE HEAD CABLE ASSEMBLY PIN OUT

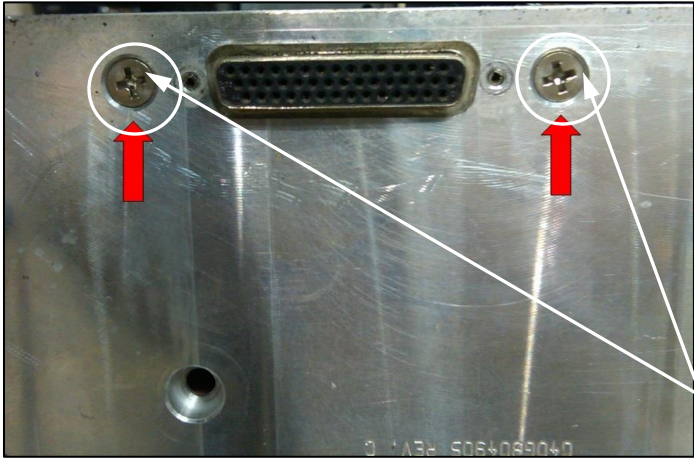
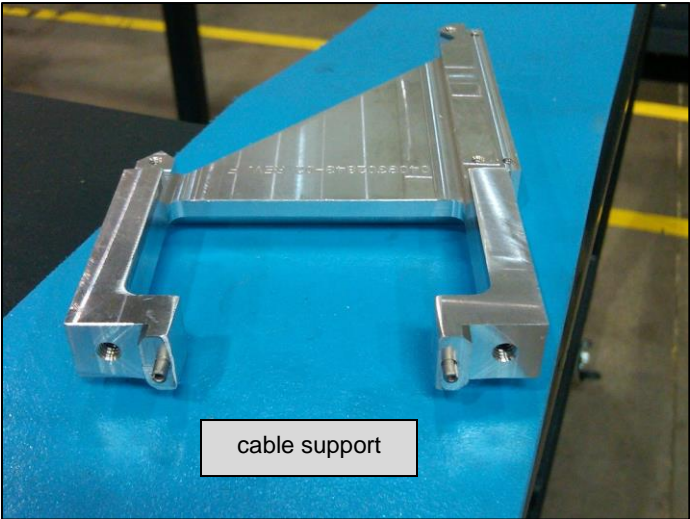
DB44 PIN #	WIRE	DB44 PIN #	WIRE
1	PAIR #1 WHITE	23	NO CONNECTION
2	PAIR #2 WHITE	24	NO CONNECTION
3	PAIR #3 WHITE	25	GROUND #2 AWG
4	PAIR #4 WHITE	26	GROUND #2
5	PAIR #5 WHITE	27	+18 VOLTS AWG 18
6	PAIR #6 WHITE	28	+18 VOLTS
7	PAIR #7 WHITE	29	GROUND #3 AWG
8	PAIR #8 WHITE	30	GROUND #3
9	PAIR #9 WHITE	31	PAIR #1 BLACK
10	PAIR #10 WHITE	32	PAIR #2 BLACK
11	PAIR #11 WHITE	33	PAIR #3 BLACK
12	PAIR #12 WHITE	34	PAIR #4 BLACK
13	PAIR #13 WHITE	35	PAIR #5 BLACK
14	NO CONNECTION	36	PAIR #6 BLACK
15	NO CONNECTION	37	PAIR #7 BLACK
16	+12 VOLTS AWG 18	38	PAIR #8 BLACK
17	+12 VOLTS	39	PAIR #9 BLACK
18	GROUND #1 AWG 18	40	PAIR #10 BLACK
19	GROUND #1	41	PAIR #11 BLACK
20	-12 VOLTS AWG 18	42	PAIR #12 BLACK
21	-12 VOLTS	43	PAIR #12 BLACK
22	NO CONNECTION	44	NO CONNECTION

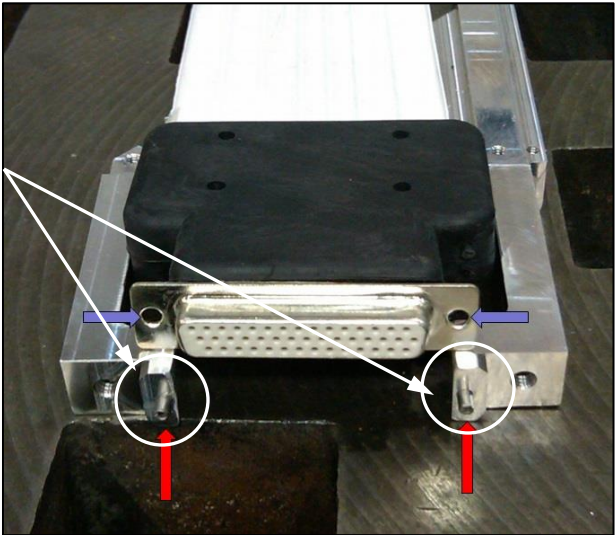
Figure 6.21: White Ribbon Cable with Pinouts

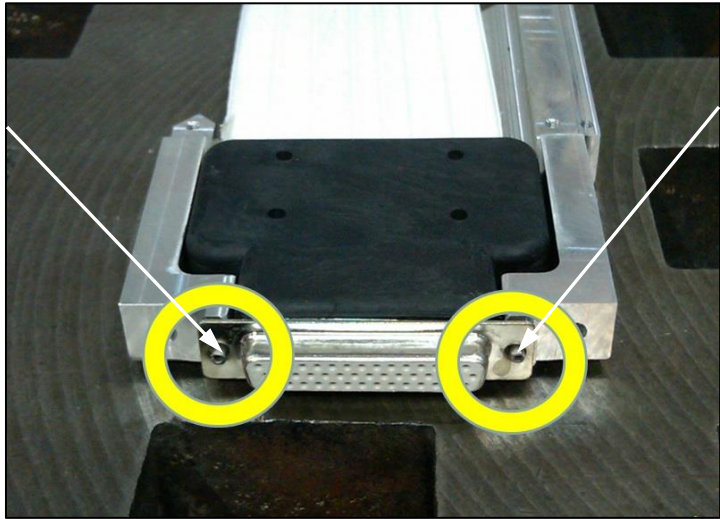
Replace White Ribbon Cable

Make sure that the power is off to the OPM and On-Press computer before connecting or disconnecting a white ribbon cable.

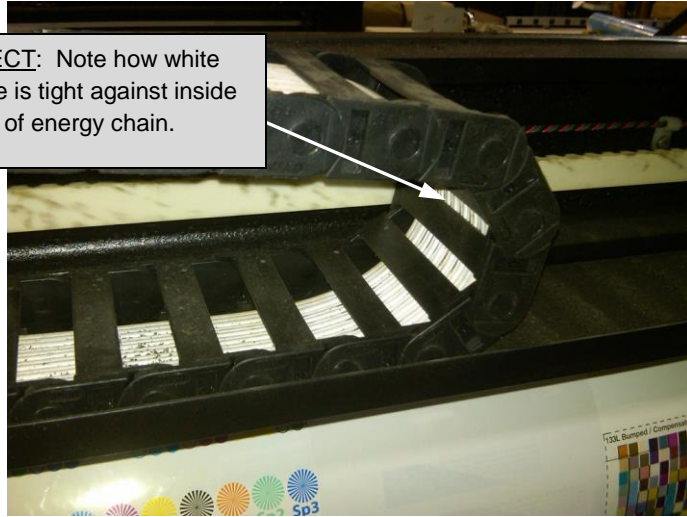
There are a number of parts that must be removed in order to replace this cable. Of all of the procedures on a Clarios system, this is probably the most difficult and delicate to perform. Extreme care must be taken to not kink the replacement white ribbon cable or damage it in any way. This is also the most expensive cable in your system.

1	Turn off the power to the OPM.
2	Remove the probe head from the carriage.
3	Disconnect the white ribbon cable from the On-Press computer.
4	<p>Remove the two Phillips screws holding the cable support to the carriage.</p>  <p>Phillips screws</p>
5	<p>Remove the small button head (or Phillips) screws holding the black cover on the cable support.</p>  <p>cable support</p>

<p>6</p>	<p>Work the white ribbon cable connector free from the cable support. There are two pins in the cable support that capture the two holes on either side of the D-SUB connector. DO NOT remove the pins from the cable support.</p> <div data-bbox="435 472 581 594" style="display: inline-block; vertical-align: middle;"> <p>cable support pins (Do Not Remove)</p> </div> 
<p>7</p>	<p>At this point, the cable should be free and you can move it back and forth in the black energy chain (track). Take the old cable and lay it out flat at both ends as it exits from the track.</p>
<p>8</p>	<p>Take the new cable and orient it properly, so that you can tape one end of the new cable to the opposite end of the old cable. You will be using the old cable to pull the new cable into the track.</p> <p>MAKE SURE that you get the new cable with the correct side up, so that when the connector is folded into position to attach to the carriage, the connector will be oriented as shown in figure for step 4 above. If you get this wrong the first time, you will need to pull the cable back out to flip it over.</p>
<p>9</p>	<p>Tape the probe head connector end of the NEW cable to the On-Press connector end of the OLD cable.</p>
<p>10</p>	<p>Use the old cable to pull the new cable into the energy chain.</p>
<p>11</p>	<p>Once the new cable is fully in the energy chain and the old cable is clear, un-tape the two and discard the old white ribbon cable.</p>

<p>12</p>	<p>Assemble the new white ribbon cable into the cable support. Make sure that the two pins on the support are seated into the holes on the new D-SUB connector.</p> 
<p>13</p>	<p>Install the black cover back onto the cable support.</p>
<p>14</p>	<p>Re-install the entire cable support assembly back onto the probe head carriage.</p> <p>Note: Be sure that the orientation of the D-SUB connector is correct, as shown in figure for step 4 above, so that the probe head connector can match up to it. If this is wrong, you will need to remove the white ribbon cable completely from the energy chain and flip it over.</p>
<p>15</p>	<p>Make sure that the white ribbon cable is not too loose or too tight within the energy chain.</p> <p>When the ribbon cable is lying in the energy chain, it should be able to move freely with the energy chain without binding up. If the ribbon cable is too close to the inside curve of the energy chain, this can cause the energy chain to buckle when the PH is moving back and forth. This can lead to premature cable wear and possibly positional errors of the PH while scanning.</p> <p>Figures below show incorrect and correct slack in the white ribbon cable.</p>

INCORRECT: Note how white ribbon cable is tight against inside curve of energy chain.



CORRECT: Note how white ribbon cable lies flat against outside curve of energy chain.



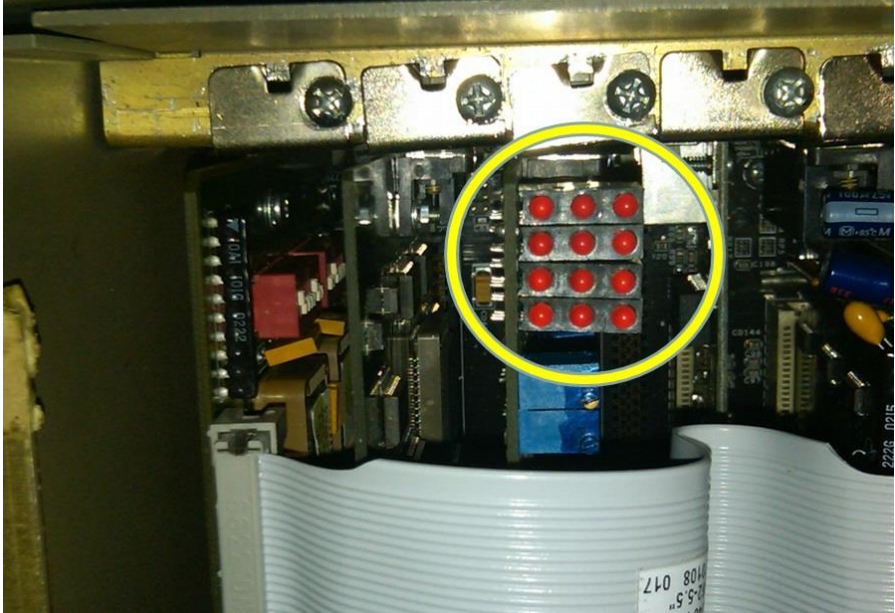
- | | |
|-----------|---|
| 16 | Once the proper slack is fed into the energy chain, you can reconnect the white ribbon cable to the On-Press computer. |
| 17 | Tuck the excess length of white ribbon cable inside the On-Press enclosure, under the OP computer when possible. This will help to keep it out of harm's way. It is important to not kink or crease the cable at any point. It should be rolled gently. |

6.13 Limit Switches

There are three limit switches on each beam. These are activated by a vane (see item 30 in figure for *Probe Head Carriages*) mounted on back of the probe head carriage. As you stand at the servo drive side of the beams, the switch nearest you is the near limit. The one near the calibration plaque is the home limit and the furthest switch from you on the other end of the beam is the far limit.

Each set of switches is connected via a harness that plugs into the servo interconnect board on the back wall of the On-Press module. Problems with the limit switches or associated wiring may appear as servo drive or On-Press computer problems. To perform the limit switch checks, you need to have a working On-Press computer.

Note: The remainder of these steps requires you to open the computer case and should only be attempted by qualified personnel. Remember to utilize an ESD wristband to avoid electrostatic damage to the internal components.

<p>1</p>	<p>Remove the On-Press computer case cover so you can view the servo controller LEDs.</p> 
<p>2</p>	<p>Insert a blank diskette into the On-Press computer floppy drive and power on the On-Press unit and On-Press computer.</p>
<p>3</p>	<p>Perform Axis 1 fixture limits and basic servo operation checks. (Refer to the Servo Controller Board's Diagnostic LEDs drawing below.) Manually move the head very slowly.</p>
<p>4</p>	<p>Confirm servo encoder LEDs (A1 & A2) alternately toggle on and off.</p>
<p>5</p>	<p>Manually move head from outside of enclosure to the inside mechanical stop.</p>
<p>6</p>	<p>Confirm that the Home Sensor LED (B3) toggles from On to Off.</p>

7	Confirm that the Near Limit Sensor LED (B2) toggles from On to Off.
8	Manually move head to Gear-end mechanical stop.
9	Confirm that the Far Limit Sensor LED (B1) toggles from On to Off.
10	Perform Axis 2 fixture limits and basic servo operation checks. (Refer to the Servo Controller Board's Diagnostic LEDs drawing below.) Manually move the head very slowly.
11	Confirm that servo encoder LEDs (C1 & C2) alternately toggle On and Off.
12	Manually move head from outside of enclosure to the inside mechanical stop.
13	Confirm that the Home Sensor LED (D3) toggles from On to Off.
14	Confirm that the Near Limit Sensor LED (D1) toggles from On to Off.
15	Manually move head to Gear-end mechanical stop.
16	Confirm that the Far Limit Sensor LED (D2) toggles from On to Off.
17	Any abnormality occurring in these steps typically indicates a fault in the limit switch, switch harness, servo interconnect board, servo interconnect ribbon cable, or On-Press computer. Inspect the wiring closely; it is very difficult to spot pinched harness wires.

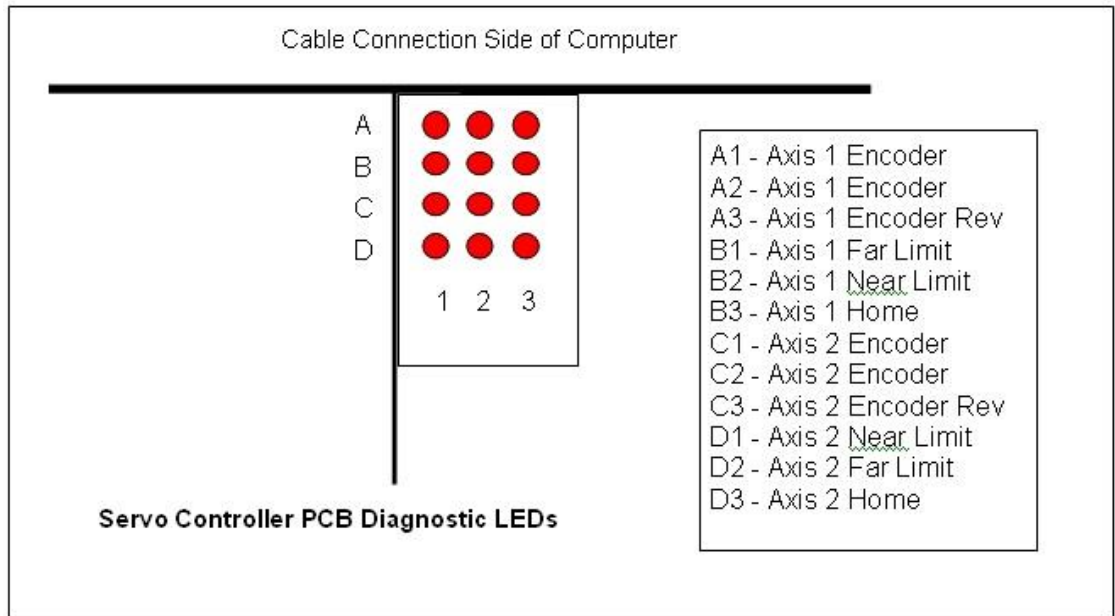


Figure 6.22: Servo Controller Board Diagnostic LEDs

6.14 Torque Specifications

There are a number of screws and bolts used with the user-replaceable parts. Refer to this chart for the correct torque.

Socket Head Alloy Steel Grade 8 (Black Color) In Steel		
Size	Torque ft-lb	Torque in-lb
#2	0.5	6
#4	0.8	10
#6	1.6	19
#8	3.2	38
#10	4.8	58
1/4	12	144
5/16	24	288
3/8	43	516
7/16	68	816
1/2	106	1272
5/8	212	2544
3/4	417	5004
7/8	590	7080
1"	901	10812

Hex Head Steel Grade 5	
Torque ft-lb	Torque in-lb
6	72
14	168
24	288
39	468
60	720
120	1440
212	2544
315	3780
472	5664

Small Screws in Aluminum *		
Size	Torque ft-lb	Torque in-lb
#2	0.3	4
#4	0.48	6
#6	1.04	12
#8	2.08	25
#10	3.36	40
1/4	8.4	101

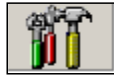
Grade 8 alloy steel tensile strength is 150,000 psi and Grade 5 tensile strength is 120,000 psi.

Note: Torques are with dry threads to 70% yield.

$$T = 0.2 \times D \times (\text{yield strength} \times 0.7 \times \text{screw root area})$$

* Aluminum screw values are approximately 65% of steel.

7 Diagnostics



If the Clarios system is not operating properly, diagnostics can help you determine what is wrong and how to fix it.



Touch the **Utilities** button on the main toolbar. On the Utilities view, touch the **Diagnostics** tab to display the Diagnostics Selection List.

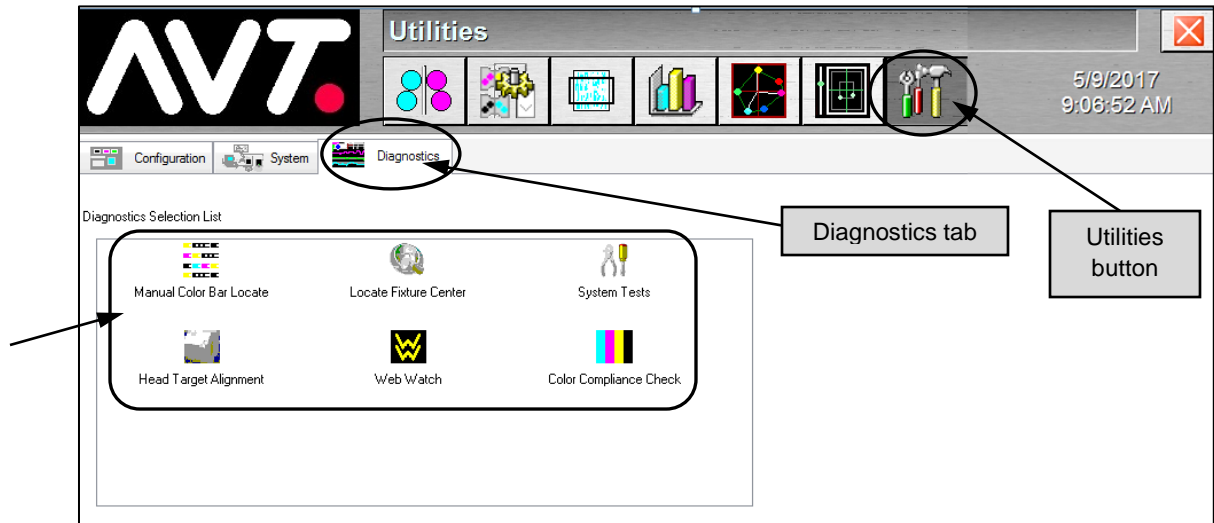


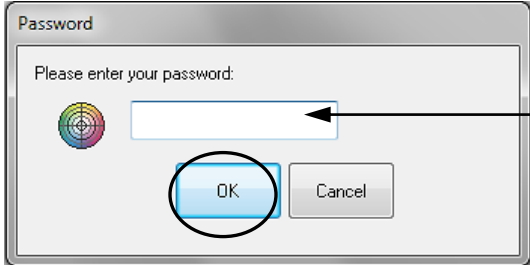
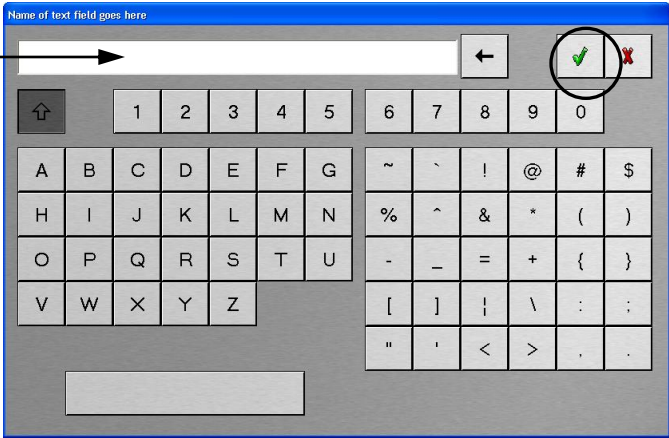

Figure 7.1: Utilities View – Diagnostics Tab

Diagnostics Selection List

Manual Color Bar Locate	Manually locate specific swatches on the color bar when the On-Press is unable to do so automatically. This will adjust the LA (color bar) position during an active form and does not make permanent changes.
Locate Fixture Center	Manually locate specific swatches on color bar and perform tests on selected swatch to determine color bar location. (Done by an AVT service technician.)
System Tests	Perform tests of the servo, camera, and measurement systems of the On-Press scanner to determine errors.
Head Target Alignment	Manually locate specific swatches and perform tests on the selected swatch to determine LC alignment difference.
Web Watch	Allows installer to watch, collect, and analyze the printing of the press and measurement characteristics of the Clarios system.
Color Compliance Check	Allows installer to perform automated procedure that is used to verify that the scanner conforms to color standards Status T or Status E.

Password Protected

To access the **Diagnostics Selections List** described in this chapter, a password must be entered. This password is set during system configuration.

<p>1</p>	<p>To access the Diagnostics Selections List, double-touch an icon and the Password dialog displays.</p>  <p>The image shows a 'Password' dialog box with the text 'Please enter your password:'. To the left is a circular icon with a rainbow spectrum. To the right is a white rectangular password entry field. Below the field are two buttons: 'OK' and 'Cancel'. The 'OK' button is circled in black. An arrow points from the text 'password entry field' to the white input field.</p>
<p>2</p>	<p>To enter the password, touch anywhere in the password entry field. The alphanumeric keypad displays.</p>  <p>The image shows an alphanumeric keypad overlaid on a text entry field. The text entry field is at the top and contains the placeholder text 'Name of text field goes here'. Below it is a full QWERTY keyboard. The 'OK' button (a green checkmark) and the 'Cancel' button (a red X) are circled in black. An arrow points from the text 'text entry display field' to the text entry field.</p>
<p>3</p>	<p>Using the keypad, enter the password by touching the keys and the password displays in the text entry display field.</p>
<p>4</p>	<p>Touch the  button to close the keypad.</p>
<p>5</p>	<p>The password displays as asterisks in the password entry field.</p>
<p>6</p>	<p>Touch OK to enter the password and close the Password dialog.</p>

Access is now allowed to the **Diagnostics Selection List**.

7.1 Manual Color Bar Locate



When the On-Press is having difficulty locating specific swatches on the color bar, the operator can find the swatches manually from the **Manual Color Bar** view.

- 1 Touch the **Manual Color Bar Locate** icon to display the Diagnostics view.

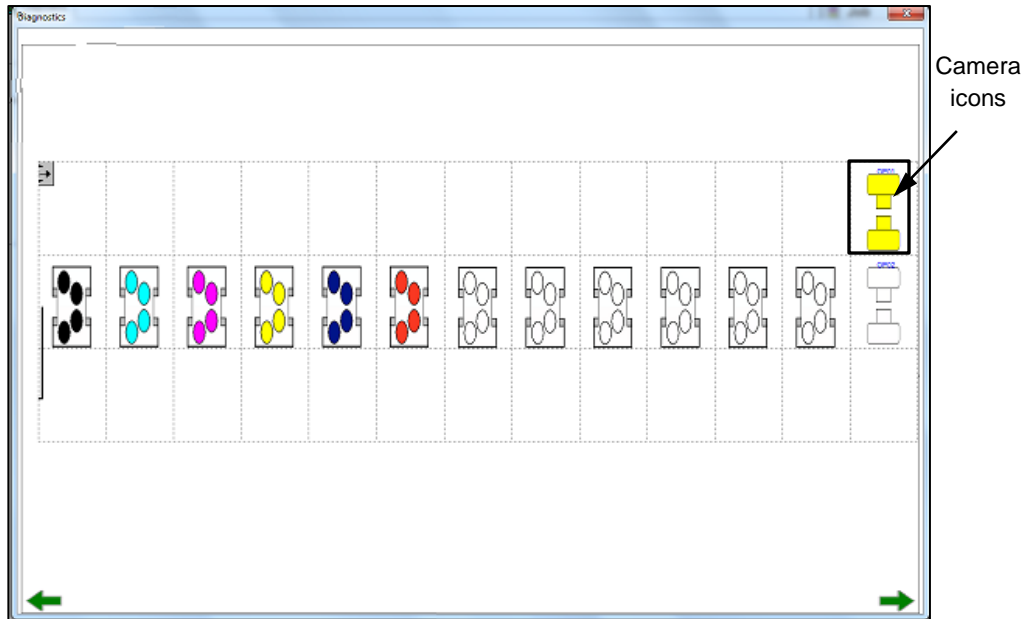
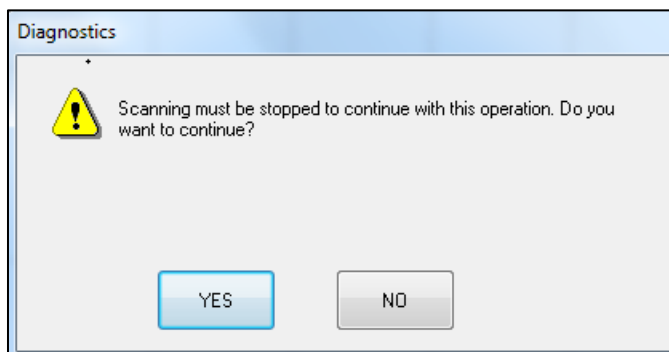


Figure 7.4: Diagnostics View

- 2 At the **Diagnostics View**, touch a camera icon and the Diagnostics message displays. The message asks: "Scanning must be stopped to continue with this operation. Do you want to continue?".

WARNING: Undertaking this diagnostic will stop Clarios from controlling color on the press.



3 Touch the **Yes** button to continue and the Manual Color Bar Locate dialog displays.

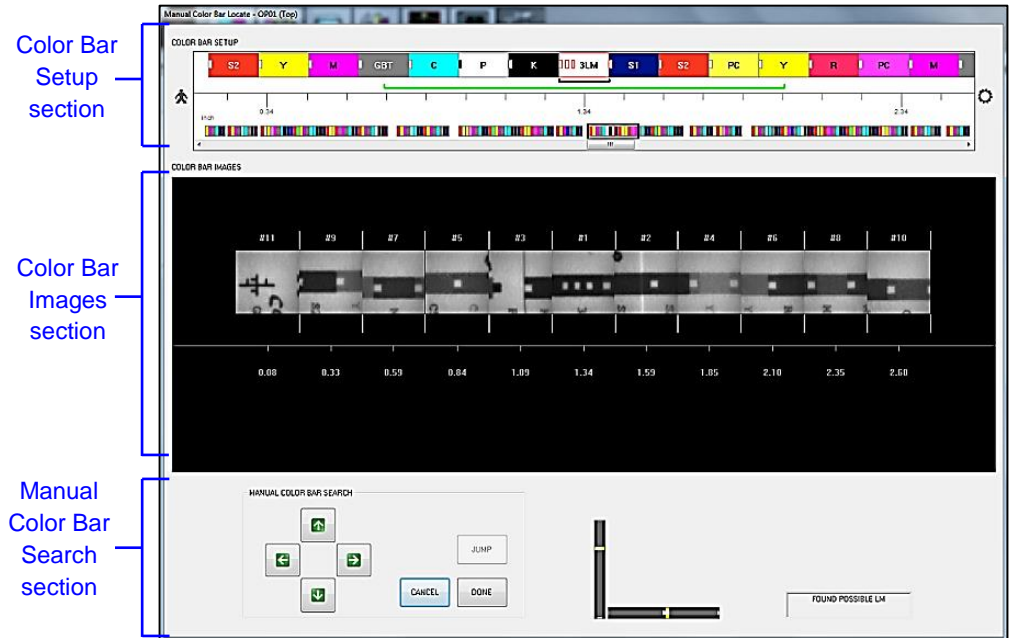
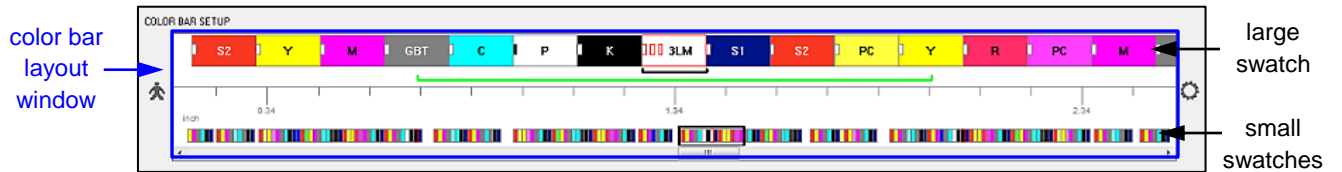


Figure 7.5: Manual Color Bar Locate Dialog

Color Bar Setup Section

This section of the dialog contains the Color Bar Setup window.



Operator Side / Gear Side

Operator and gear sides of the press are shown graphically.



Figure 7.6: Operator and Gear Side Press

Small and Large Swatches

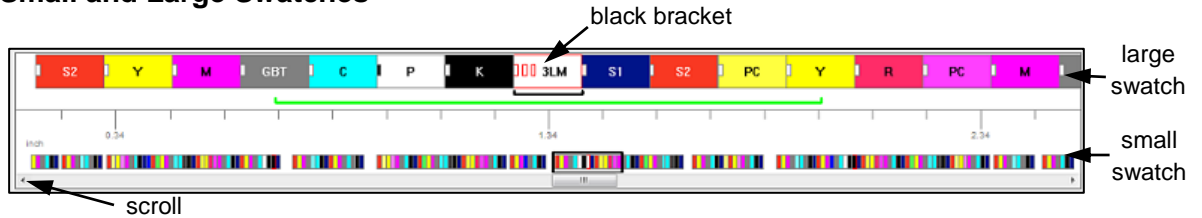


Figure 7.7: Small and Large Swatches

<p>Small Swatch</p>	<p>Small graphical swatch elements that represent the complete primary color bar.</p> <ul style="list-style-type: none"> ➤ The green bracket indicates a zoomed area of the color bar image. ➤ The yellow vertical line indicates the center (not shown in the figure). ➤ Red vertical line(s) (not shown in the figure) indicate page boundaries. <p>Touch a swatch in Color Bar Setup window and the scanner goes to that point on web and scans. Images for that range of swatches display.</p>
<p>Large Swatch</p>	<p>Displays a large graphical swatch of the primary color bar showing:</p> <ul style="list-style-type: none"> ➤ LA location scale ➤ image group area identification (green group line) ➤ center image identification (yellow group line) ➤ page boundary identification (red line and number) <p>Touch swatch to select the center image and move image group area.</p> <p>Touch the left and right scroll buttons to view other parts of color bar.</p>

Color Bar Images Section

A gray scale camera image of the color bar displays here. The image rotation is determined by the system configuration

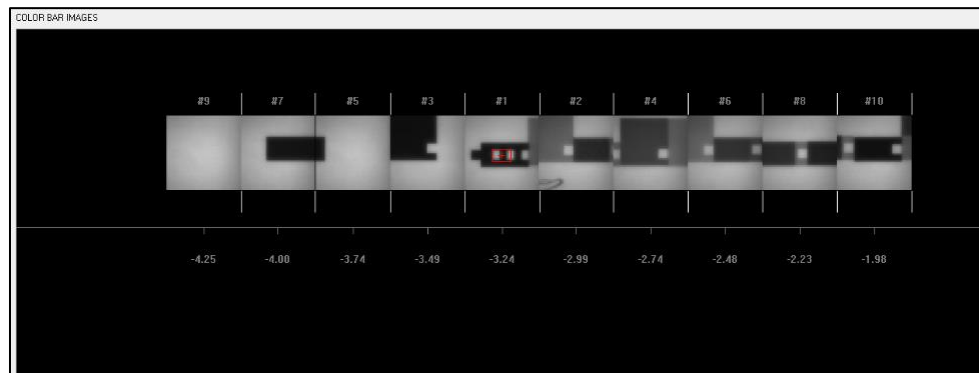
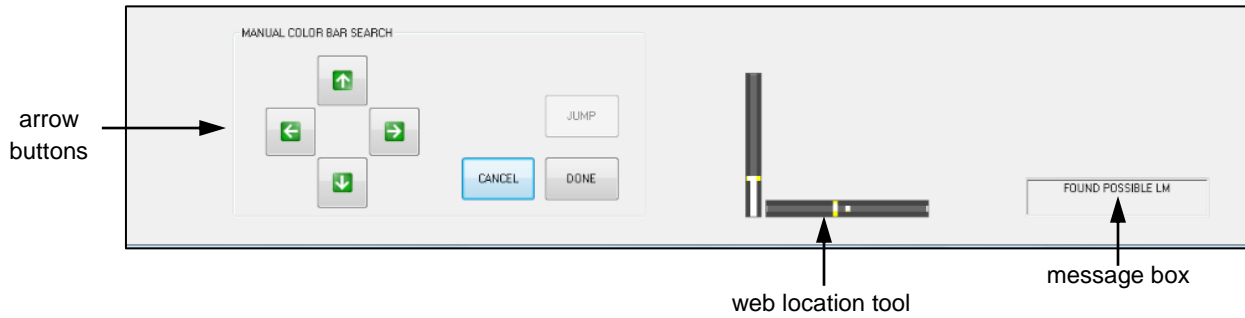


Figure 7.8: Gray Scale Camera Image of Color Bar

Manual Color Search Section



Arrows

Use the **arrow** buttons in the Manual Color Search section to continuously scan left, right, up, or down to locate the Locator Mark (LM).

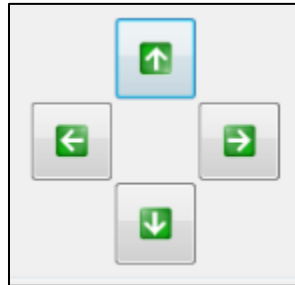
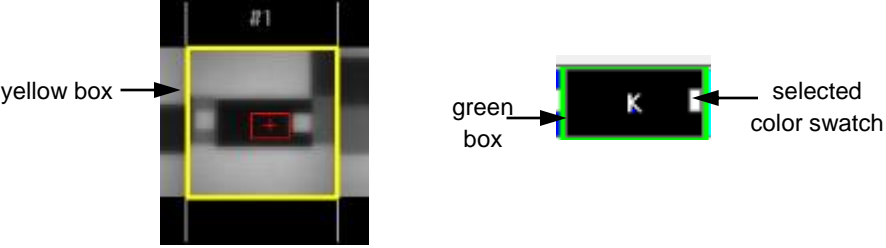
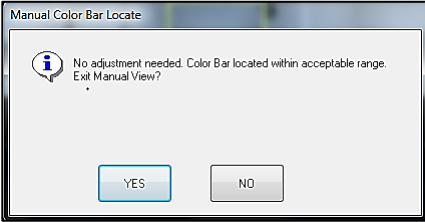


Figure 7.9: Four Direction Arrow buttons

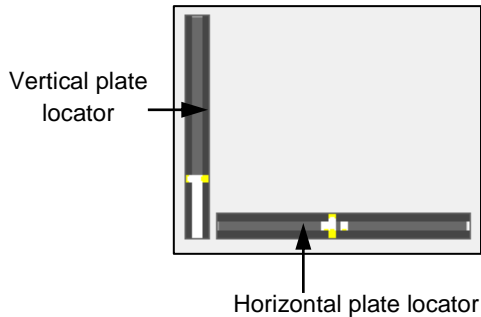
<p>Up and Down arrows</p>	<p>Use to search up and down.</p> <p>The up and down arrow buttons search the running direction of the web. Touch the Cancel button and then the down arrow to begin searching down. While searching up or down, push the left or right arrow buttons to adjust the lateral search position by $\pm 0.40\text{cm}$ ($\pm 0.16\text{ in}$), and then continue searching up or down.</p> <p>The default search direction is up.</p>
<p>Left and Right arrows</p>	<p>Use to search left and right.</p> <p>The left and right arrow buttons search across the web. If a possible LM or swatch target is found, push the left or right arrow button to search horizontally rather than vertically. The horizontal search continues until another possible target is found.</p> <p>Touch the Cancel button and then the up or down arrow buttons to stop the horizontal search and begin the vertical search.</p>

Cancel/Jump/Done Buttons

<p>Cancel</p>	<p>Use to cancel actions.</p> <ul style="list-style-type: none"> ➤ If pressed while searching, the search is canceled. ➤ If pressed while idle, the diagnostic operation is canceled with a prompt to the operator to exit.
<p>Jump</p>	<p>Use to adjust the search location.</p> <p>The Jump button, if pressed while searching, adjusts the circumferential search location by 1/2 (one half) of the cutoff length. If the Jump button is pressed while searching left or right, the lateral search location is adjusted by $\pm 5.00\text{cm}$ (± 2.00 inches).</p>
<p>Done</p>	<p>When the Done button is touched, a yellow box displays in the center of the Color Bar Images Section of the dialog box.</p> <div style="text-align: center;">  </div> <p style="text-align: center;">Figure 7.10: Cancel / Jump / Done Buttons</p> <p>Touch the matching LM in the Color Bar Setup display. A green box appears around the swatch. The program calculates the left-right movement of the color bar.</p> <p>If no adjustments are needed, a message displays indicating this.</p> <div style="text-align: center;">  </div> <p>Touch the Yes button to exit the Manual Color Bar Locate dialog.</p> <p>A message may display asking, “Color Bar should be moved 2.00 cm (or 0.80 in) to the RIGHT. Move the color bar and exit?”.</p> <p>Touch the Yes button to move the color bar and exit the Manual Color Bar Locate dialog.</p> <p>Notes:</p> <ul style="list-style-type: none"> • White space around an LM helps Clarios find and identify the LM. If you are using a LM rather than a 3-FLM (3-feature locator mark), be sure that it is surrounded with the most white space. • 3-FLM locator marks do not require white space around them.

Web Location Tool

The web location tool includes a vertical and horizontal plate locator. The locator bars turn white as the plate is scanned.



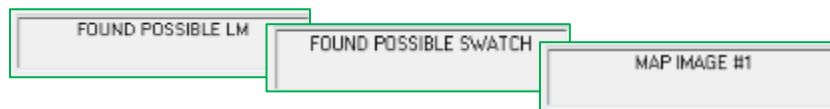
Vertical – When vertical bar is all white, indicates that entire plate has been vertically scanned.

Horizontal – Only a small bar of white will display relative to scanner.

Yellow lines are the current search location of the video images.

Message Box

The **Message** box contains messages that describe actions taken at this screen.



Messages include:

- Initial search
- Searching up or down
- Searching left or right
- Cancel search
- Search aborted
- Found possible swatch
- Found possible LM

When a possible LM is located, verify its approximate position by checking a printed sheet against the **Color Bar Setup** display. If this is the correct LM, touch the **Done** button.

7.2 Locate Fixture Center



This option allows the AVT service technician to locate specific swatches of the color bar and perform tests on the selected swatch to determine its LA position difference and suggest a new value.

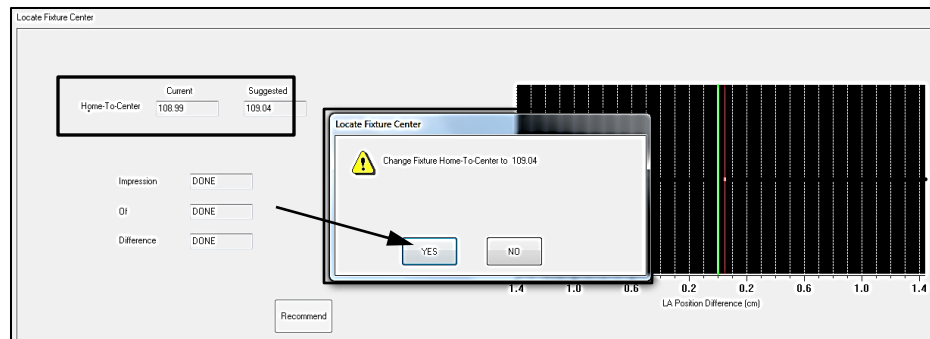
1	Touch the Locate Fixture Center icon to display the Diagnostics view.
2	At the Diagnostics view, touch the camera icon and the Locate Fixture Center dialog displays.
Color Bar Setup section	
Color Bar Images section	
Controls	
3	When the swatch to be measured is located (it displays with a yellow box in the Color Images section), touch the Done button.
4	Click on the large swatch in the Color Bar Setup section and then click Done again. A Diagnostics dialog appears asking: "Execute Test Procedure On Target In Image #1?".

Figure 7.11: Locate Fixture Center Dialog Box

- 5 Touch the **Yes** button to execute the test procedure on the target. The Locate Fixture Center dialog redisplay while the test is in process, replacing the Color Bar Images section with the **Results Area**.



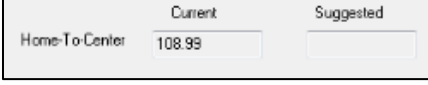
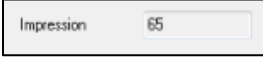



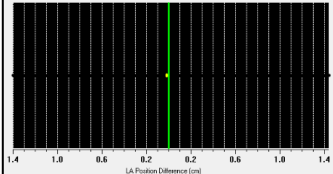
- 6 When the test completes, a **Suggested** value displays for **Home-to-Center** and an auto update message dialog displays.



Touch the **Yes** button to replace the **Current** value with the **Suggested** value.
 Touch the **No** button to type in a new value in the **Suggested** value field.

Results Area

This section of the dialog box contains the following subsections:

<p>Home-To-Center</p> 	<ul style="list-style-type: none"> ➤ Current: Displays current configuration value. ➤ Suggested: Displays suggested configuration value when test completes.
<p>Impression</p> 	<p>Displays real-time test impression count.</p>
<p>Of</p> 	<p>Displays expected test impression count.</p>
<p>Difference</p> 	<p>Displays real-time test LA position difference from nominal.</p>
<p>Image</p> 	<p>Displays real-time test image. Search result target graphic overlays image.</p>
<p>Plot</p> 	<p>Displays a real-time plot. Difference dot plot is shown in green.</p>

Controls

See [Manual Color Bar Locate](#) for more information about using the search arrows.

Message Box

Messages describing actions taken at this screen display in the message box.

7.3 System Tests



If the On-Press scanner is giving incorrect readings, there may be errors in the settings for the servo, camera, or measurement systems. To determine where errors might be occurring, the operator can run the system tests.

Note: This option is available to both operator and installer. However, due to limitations of the On-Press, the operator can select an On-Press unit for testing, but not individual scanners.

Run Basic System Tests

You should run the basic system tests from **Utilities > Diagnostics** as the very first step in troubleshooting any suspect probe head.

The Pass / Fail results of the system tests are not so important and can in fact be misleading. A probe head can pass a system test and still not be able to scan properly. What is important in the system test is the results codes that follow the Pass / Fail indicators. With respect to the probe head, the camera and measurement systems results, as well as two images for every probe are important.

1 Touch the **System Tests** icon to display the System Tests dialog.

Test Items	Head1 test results			Head2test results				
	Results	Passed	Details	Results	Passed	Details		
Servo System	00-0000	<input type="checkbox"/>	...	00-0000	<input type="checkbox"/>	...		
Camera System	00-0000	<input type="checkbox"/>	...	00-0000	<input type="checkbox"/>	...		
Measurement System	00-0000	<input type="checkbox"/>	...	00-0000	<input type="checkbox"/>	...		
Camera Images	Black Image		White Image		Black Image		White Image	

On-Press Selections window

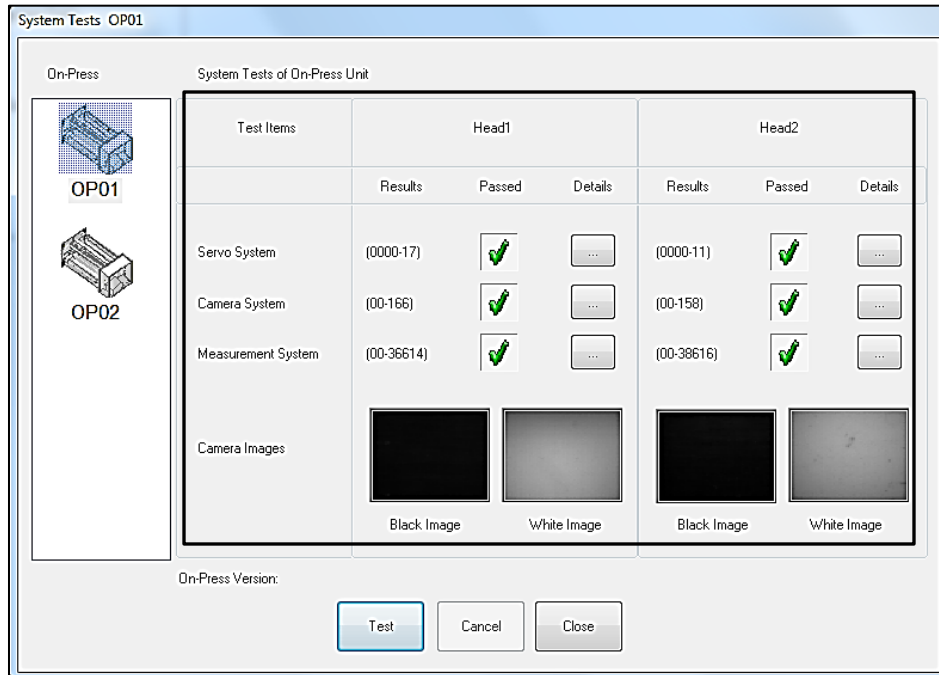
Test button

Details or Ellipsis buttons

Figure 7.12: System Tests Dialog

<p>2</p>	<p>Touch the icon in On-Press Selections window for the selected On-Press.</p> <p>Note: The operator can select only <u>one</u> On-Press unit at a time.</p> <p>The Head1 and Head2 test results sections display the test items and the results for scanner heads 1 and 2.</p> <p>If the On-Press selected is a one-head unit, the result area for the unused head is blank.</p>
<p>3</p>	<p>Touch the Test button to start the tests. A confirmation dialog appears with a warning statement: “Attention - Testing will cause scanner head(s) to move out over web (as long as the press speed is fast enough). Continue?”.</p> <div data-bbox="578 632 1247 982" data-label="Image"> </div>
<p>4</p>	<p>Touch the Yes button to continue the tests. Clarios automatically tests:</p> <ul style="list-style-type: none"> ➤ servo system ➤ camera system ➤ measurement system ➤ camera images - include black and white images <p>Selecting No cancels the tests.</p>

- 5 When the tests complete, the results display on the dialog as described in “Test Results” below.



Test Results

After the tests are done, results are displayed as:

Passed	Indicated by a large green check mark.
Failed	Indicated by a red check mark (only when the result error code is 0).
Test Skipped	Indicated by an empty check box.
Numeric Reading	Shown in the respective fields.
Details	Pop-up dialog box (System Test Report) shows test details.

Note: To display a pop-up box, touch the ellipsis or details button for servo, camera, or measurement systems.

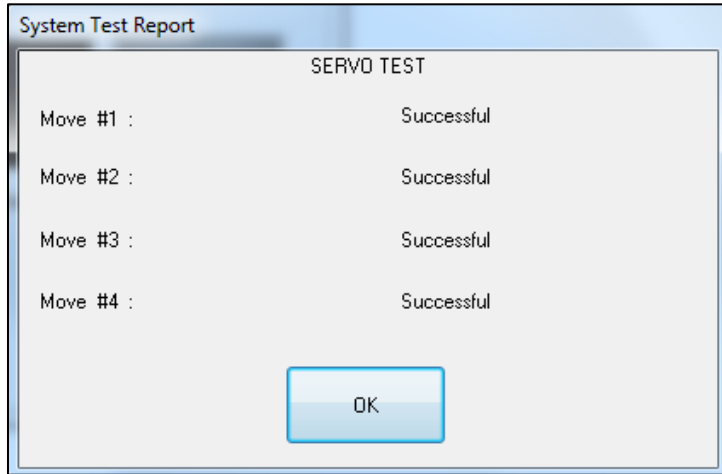


Figure 7.13: System Test Report – Servo Test

Note: If any system fails, report it to AVT Customer Service.

Control Buttons

Test	Touch this button to start the tests.
Cancel	Touch this button to cancel the operation while doing the system test.
Close	Touch this button to close the System Tests dialog.

Troubleshoot Servo System Test

The servo system test makes a total of four position moves, checking the controller's final position against the requested position on all moves. The final two moves check the home sensor location against its location from the previous move.

For safety, the scanner head does not move onto the web if the press is not moving. Also, the test aborts if the press speed drops below the minimum scan speed (300 FPM for standard systems, 175 FPM for carton).

Like the camera and measurement tests, the PASS / FAIL result of the servo test is not as important as the result codes.

Below is a chart on how to interpret the result codes.

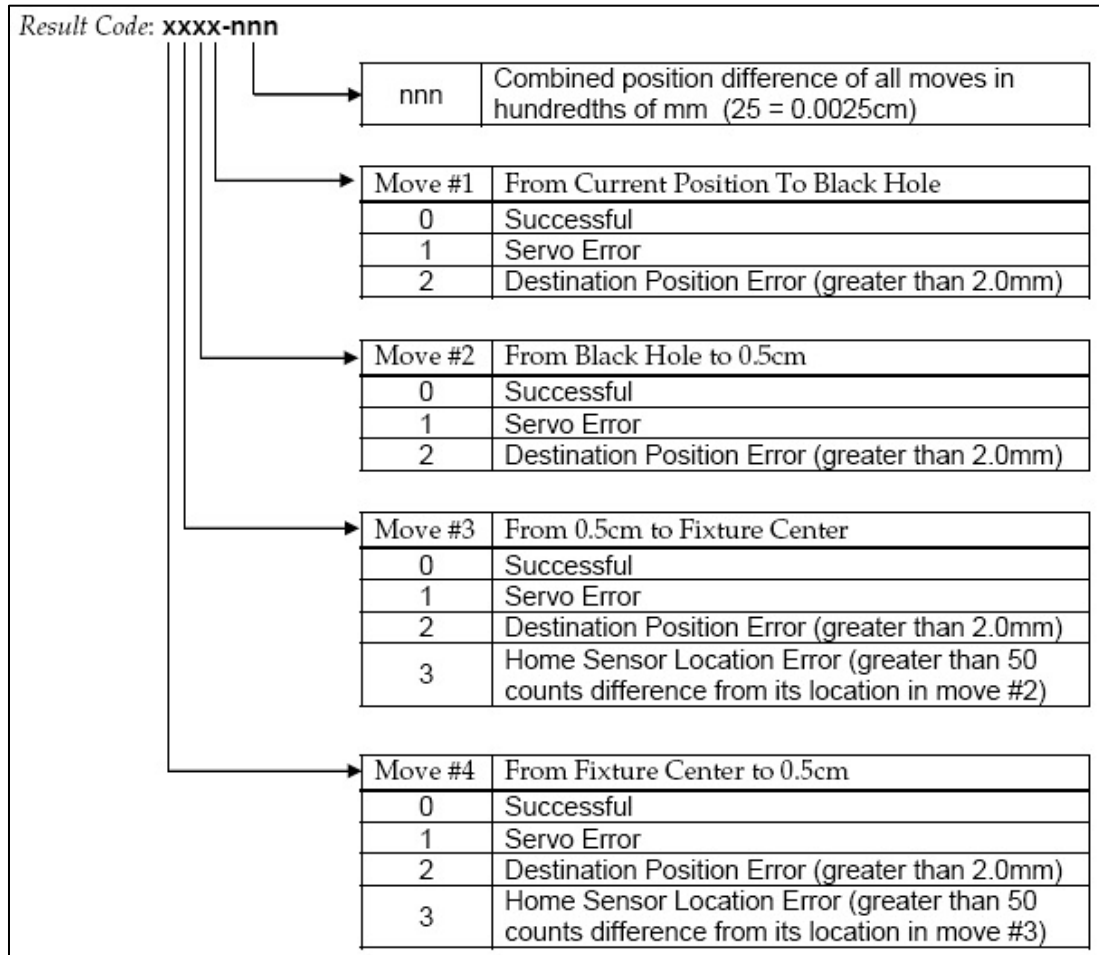


Figure 7.14: Servo System Test Result Codes

Note: A result of 5000-00 means that the system did NOT run a servo test because the press was not running above the minimum scan speed. Although the system reports this as a failure, it is NOT a failure of the hardware and the test should be run again with the press running.

The *nnn* numbers should be small. Typically, anything less than 50 can be ignored. Anything greater and you may have a problem with the servo drive or something may be obstructing the path of the PH. If there are any errors in the first 4 digits, it could be something major or it could be something as simple as an energy chain that is bound up or a sliding cover on the calibration plaque that does not slide easily.

1	Remove the sliding calibration plaque cover and try again.
2	If that does not resolve the error, turn the power to the OP off and manually move the probe head the entire length of the beam, paying close attention to any portion of the travel that may seem to bind.

An often overlooked point on the beam itself is the idler housing assembly for the pulley that guides the long, white linear belt. These pulleys can receive damage severe enough to separate the flange from the pulley and cause intermittent binding as well as permanent damage to the linear belt if not caught in time.

Other possible issues with servo drives are worn or loose belts. These should be inspected and replaced, if necessary.

- The white/clear belt from the intermediate shaft to the beam pulley is auto-tensioned when installing the servo drive, since the servo drive mount is spring loaded.
- The black belt from the motor to the intermediate shaft has no tensioning mechanism.

Note: NEVER ROLL A BELT OVER A FLANGE. This can damage the belt.

Servo Drive Replacement

No calibration of a replacement servo is required. This is automatically done when rebooting the OP computer.

Servo Drive Part Numbers

There are four different part numbers in use for the servo drives. There are RH and LH assemblies, as well as different length pigtails for each. The longer pigtails are used on Ecocool systems, whereas most standard OP modules use the standard length pigtails. While the longer pigtail versions can be used in place of the shorter version, you cannot use the short version in place of the longer version.

Part Number	Description
055G400126-01	ASSY, SERVO CQ LH
055G400126-02	ASSY, SERVO CQ RH
055G400126-03	ASSY, SERVO CQ ECOCOOL LH
055G400126-04	ASSY, SERVO CQ ECOCOOL RH

LH or RH Assemblies

To determine the proper assembly orientation, when you are standing at the end of the beams near the servo drives (typically on the computer side of the beams as well, although this is not always the case), the LH assembly is on your left side and the RH assembly is on your right side.

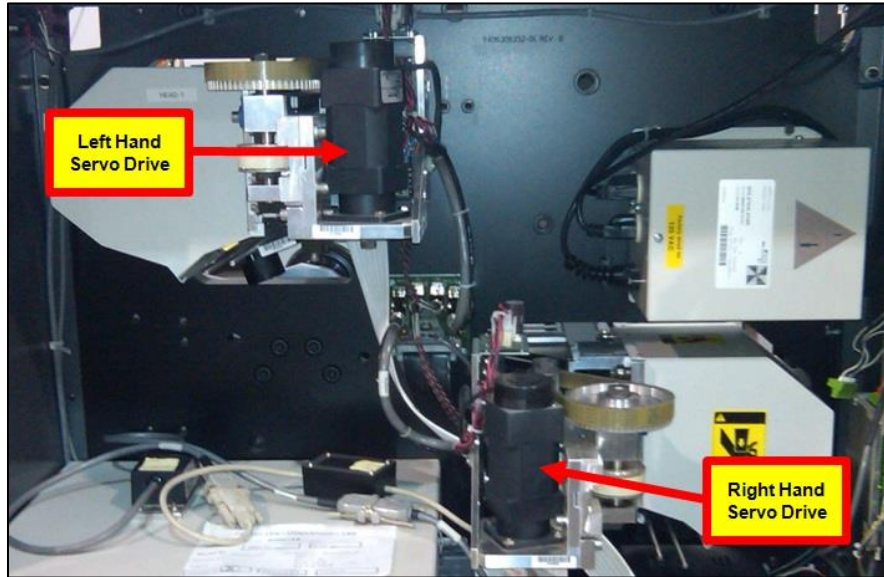


Figure 7.15: Servo Drive Orientation

Power Supply

The power supply for the servo drives is the large PS mounted in the OPM. This provides 24 volts. Typical amperage draw under normal operating circumstances for the PS is 4 – 6 amps, with a peak of 7 – 12 amps. Anything greater than this value may be an indication of a faulty servo drive or binding PH carriage. This amperage can be checked with a clamp style ammeter.

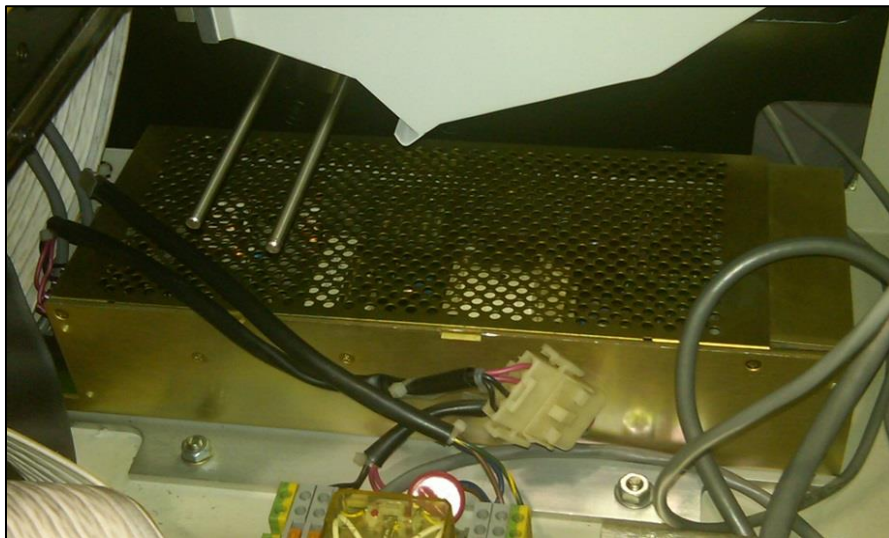


Figure 7.16: 24V Power Supply

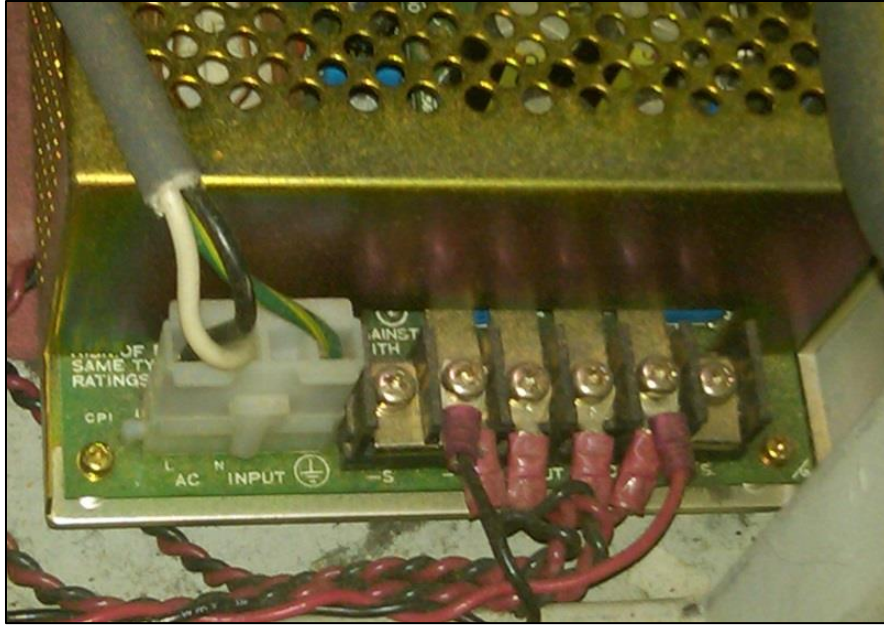


Figure 7.17: 24V Power Supply Connections

Troubleshoot a Camera System Test

The camera system test gets a camera image over the black hole and another image over the white plaque.

The image taken over the black hole is expected to have a very low white level, while the image taken over the white plaque should have a high white level.

Result Code: **xx-*nnn***

<i>nnn</i>	White Plaque White Level (180 to 200 typical)
Black Hole Image	
0	Successful
1	Camera Error
2	White Level Too High Error (greater than 50)
White Plaque Image	
0	Successful
1	Camera Error
2	White Level Low (greater than 90 and less than 130)
3	White Level Too Low Error (less than 90)

Figure 7.18: Camera System Test Result Codes

For the *nnn* result above, the minimum level is ~135 and the maximum level is ~200.

Assuming the first two digits in the result code are zeroes, perform the following steps.

1	<p>If the results (<i>nnn</i>) are <u>below the minimum</u>:</p> <ul style="list-style-type: none"> a) Clean the camera glass and white tiles on the calibration plaque with alcohol. b) If that fails, replace the probe head with another and try again. <p>If the poor test result persists on that surface, you may have a faulty On-Press computer.</p>
2	<p>If the results (<i>nnn</i>) are <u>above the maximum</u>, replace the probe head with another and try again.</p> <p>If the poor test result persists on that surface, you may have a faulty On-Press computer.</p>

Troubleshoot a Measurement System Test

The camera system test takes a measurement over the black hole and another measurement over the white plaque.

The measurement taken over the black hole is expected to have a very low sample A/D peak value, while the measurement taken over the white plaque should have a high A/D peak value.

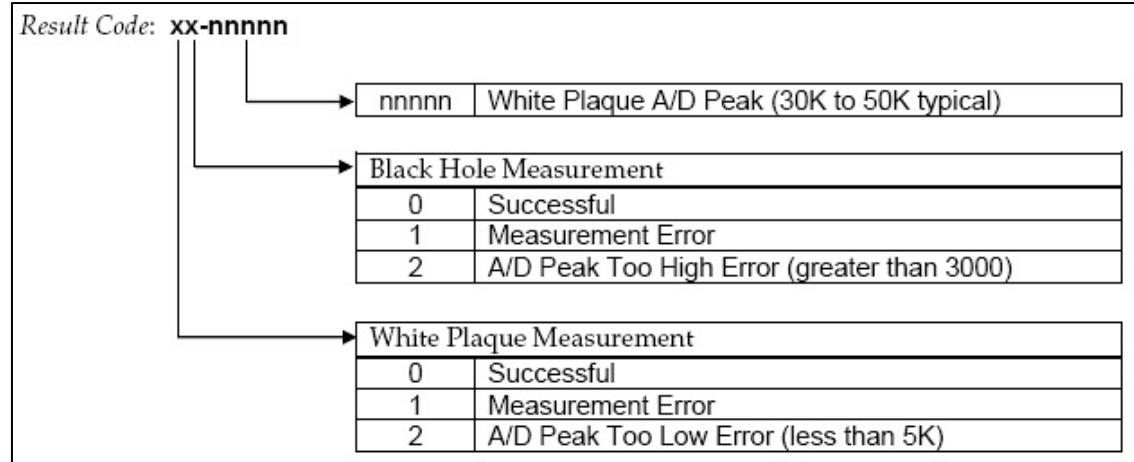


Figure 7.19: Measurement System Test Result Codes

For the *nnnnn* result above, the minimum level is ~25K and the maximum is ~60K.

Assuming the first two digits in the result code are zeroes, perform the following steps.

1	<p>If the results are <u>below the minimum</u>:</p> <ul style="list-style-type: none"> a) Clean the white tiles on the calibration plaque. b) Remove the black hole, clean it out, and replace it. c) Remove the probe head from the carriage, remove the cone on the underside of the probe head, and clean the fiber optic array under the cone using alcohol and a cotton swab. d) If that does not improve the test result, replace the probe head with another and try again. <p>If the poor test result persists, you may have a faulty On-Press computer or white ribbon cable.</p>
2	<p>If the results (<i>nnn</i>) are <u>above the maximum</u>, replace the probe head with another and try again. If the poor test result persists on that surface, you may have a faulty On-Press computer.</p>

Troubleshoot Camera Images

In the system tests results, there are also two images taken by the camera and these are an important part of the test in determining the current state of any probe head. The black image should be completely black with no white spots in it.

1	<p>If there are white spots in the black image, try cleaning both the probe head and the calibration plaque completely.</p>
2	<p>If that does not improve the black image, try another probe head. If the poor black image persists, you may have a faulty On-Press computer or white ribbon cable.</p>
3	<p>Check the connections of the white ribbon cable at the On-Press computer, as well as at the probe head.</p> <p>There is a positive acting slide connector on the white ribbon cable that can sometimes not be installed properly. If the black image looks like a starlit night with a lot of white pinholes in it, you definitely have a poor connection between the On-Press and the probe head. Again, this can be a faulty connection or a faulty ribbon cable.</p>

The white image should be completely clear with no black or dark gray spots in it. The image may not be completely white. The important thing is that the image looks clean.

1	<p>If the image does not look clean, clean both the probe head and calibration plaque assembly completely.</p>
2	<p>If that does not improve the white image, try another probe head. If a poor white image persists, you may have a faulty On-Press computer or white ribbon cable.</p>

- 3** Check the white ribbon cable connections at the On-Press computer, as well as at the probe head.
- There is a positive acting slide connector on the white ribbon cable that can sometimes not be installed properly. If the image has a lot of bright white pinholes in it, you definitely have a poor connection between the On-Press and probe head. Again, this can be a faulty connection or a faulty ribbon cable.

In the figure below, the black and white images on Head 1 look OK. The white image on Head 2 is dirty. Clean both the white tile and the camera glass to remove the grime that shows up in this image.

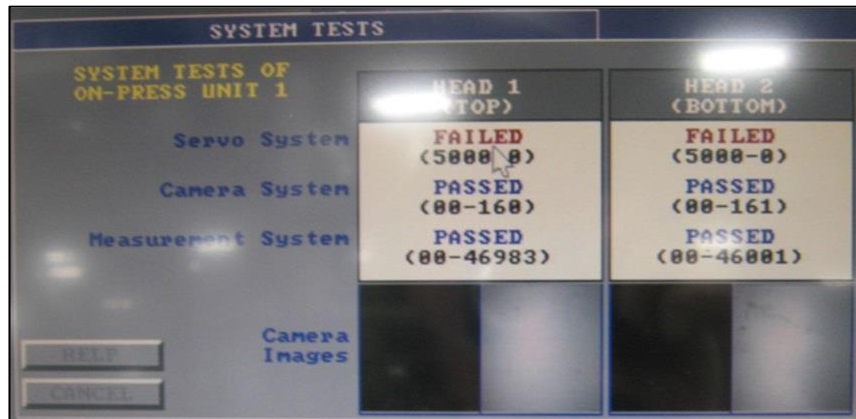


Figure 7.20: Camera Image #1

In the figure below, Head 1 images look good. The black image is OK for Head 2, but the white image is dirty. The white tile and the camera glass both need to be cleaned. In addition to the poor white image.

This test shows a low camera test. The 20-119 result code indicates that the white level is low (greater than 90, but less than 130). The 119 is the actual white level. This can likely be corrected by just cleaning the glass and white tile, but if both have been cleaned and the result code is still less than 130, then try another probe head to see if the problem is the probe head or some other component.

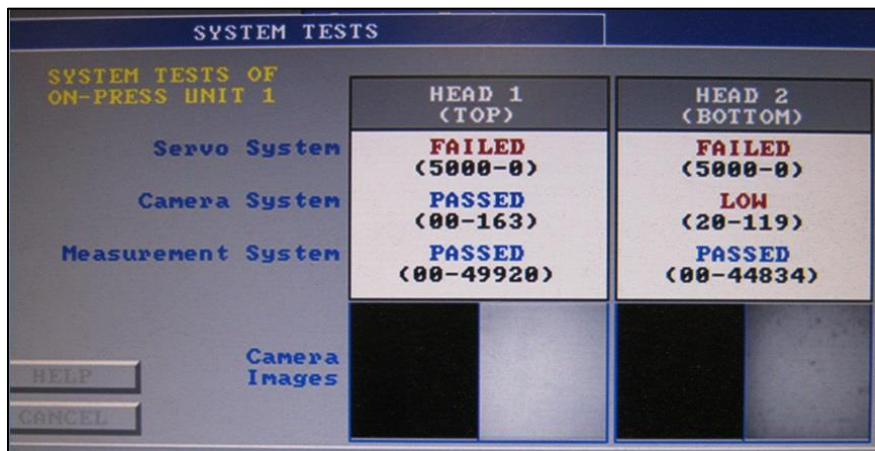


Figure 7.21: Camera Image #2

7.4 Head Target Alignment



This option allows the operator to locate specific swatches of a color bar and to perform tests on the selected swatch, to determine its LC alignment difference and suggest a new value.

Notes:

- You must pick a swatch that is only 2 mm high, with 2 mm of white space on each side.
- You cannot use a locator mark for this procedure.

1	Touch the Head Target Alignment icon to display the Diagnostics view.
2	<p>At the Diagnostics view, touch the camera icon and the Head Target Alignment dialog displays.</p> <div style="text-align: center;"> </div> <p style="text-align: center;">Figure 7.22: Head Target Alignment Dialog</p>
3	Use the arrows in the Controls section to perform a search.
4	<p>When the Done button is touched, a Diagnostics dialog appears asking: “Execute Test Procedure On Target In Image #1?”.</p> <div style="text-align: center;"> </div>

- 5 Touch **Yes** to execute the test procedure on the target and the **Color Bar Images** section of the Head Target Alignment dialog changes to a **Head Target Alignment** section.

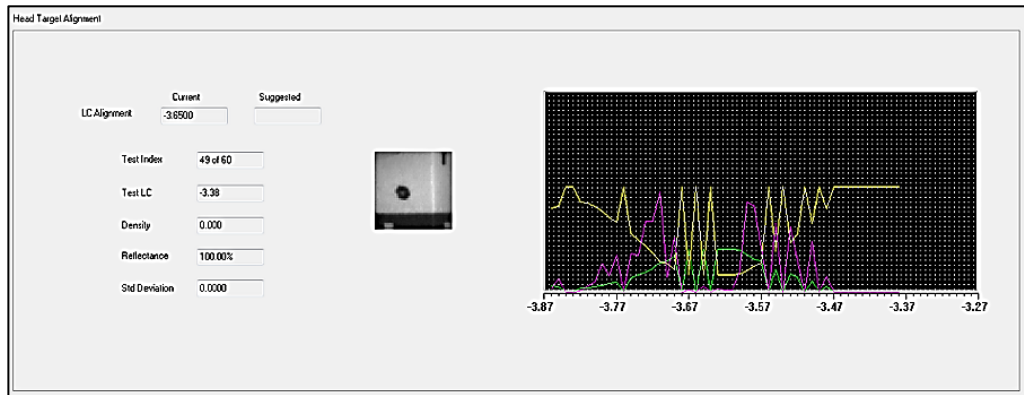
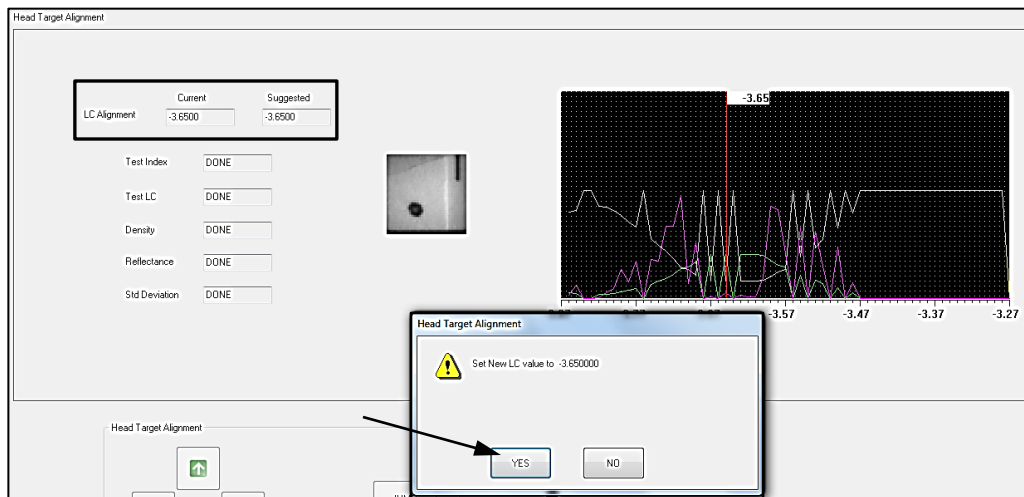


Figure 7.23: Head Target Alignment Section

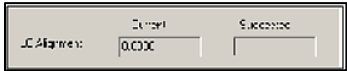
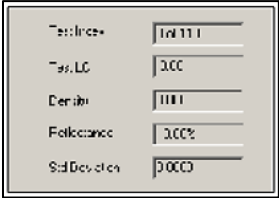

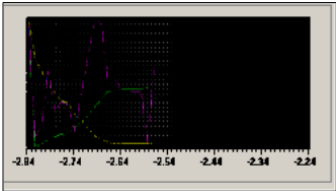
- 6 When the test completes, a **Suggested** value displays for **LC Alignment** and an auto update message dialog displays.



Touch the **Yes** button to replace the **Current** value with the **Suggested** value. Touch the **No** button to type in a new value in the **Suggested** value field.

Head Target Alignment Section

This section shows the numeric values and graphical representations of the following parameters.

<p>LC Alignment</p> 	<p>Contains two windows:</p> <ul style="list-style-type: none"> ➤ Current: Current system configuration value. ➤ Suggested: Suggested configuration value when test completes.
<p>Test Index</p> 	<p>Real-time test pass count.</p>
<p>Test LC</p>	<p>Real-time test head alignment value.</p>
<p>Density</p>	<p>Real-time test density measurement.</p>
<p>Reflectance</p>	<p>Real-time test reflectance measurement.</p>
<p>Standard Deviation</p>	<p>Real-time standard deviation.</p>
<p>Image</p> 	<p>Real-time test image. The search result target graphic overlays the image.</p>
<p>Plot</p> 	<p>Real-time plot.</p> <ul style="list-style-type: none"> ➤ Plot bottom scale adjusts depending on 4-inch or 8-inch probe head. ➤ Density line plot is in green. ➤ Reflectance line plot is in yellow. ➤ Standard deviation line plot is in magenta

Controls

See [Manual Color Bar Locate](#) for more information about using the search arrows.

Message Box

Messages describing actions taken at this screen display in the message box.

7.5 Web Watch



This option allows the installer to watch, collect, and analyze the printing of the press and the measurement characteristics of the Clarios system.

1	Touch the Web Watch icon to display the Diagnostics view.
2	At the Diagnostics View , touch the camera icon and the Web Watch dialog displays.
<p>The screenshot shows the Web Watch dialog with three main sections. The top section, 'COLOR BAR SETUP', displays a color bar with various color patches and a scale from 0.00 to 2.49. A black bracket and a green bracket are shown above the scale. The middle section, 'COLOR BAR IMAGES', shows a series of grayscale images of the color bar with a red box highlighting a specific area. The bottom section, 'MANUAL COLOR BAR SEARCH', contains directional arrows (up, down, left, right), a 'JUMP' button, and 'CANCEL' and 'DONE' buttons. A 'Message box' at the bottom right displays the text 'FOUND POSSIBLE LM'.</p>	
Figure 7.24: Web Watch Dialog - Initial	
3	Search for color bar by following the instructions in Manual Color Bar Locate .
4	When the Done button is touched, a yellow box displays in the center of the Color Bar Images Section of the dialog.
5	Touch the yellow box and the Web Watch decision dialog appears, with a message asking: “Execute Test Procedure On Target In Image #1?”.
<p>The screenshot shows a decision dialog box titled 'Web Watch'. It contains a yellow warning icon and the text 'Execute Test Procedure On Target In Image #1?'. Below the text are two buttons: 'YES' and 'NO'.</p>	

6 Touch **Yes** to execute the test procedure on the target and the Web Watch dialog displays.

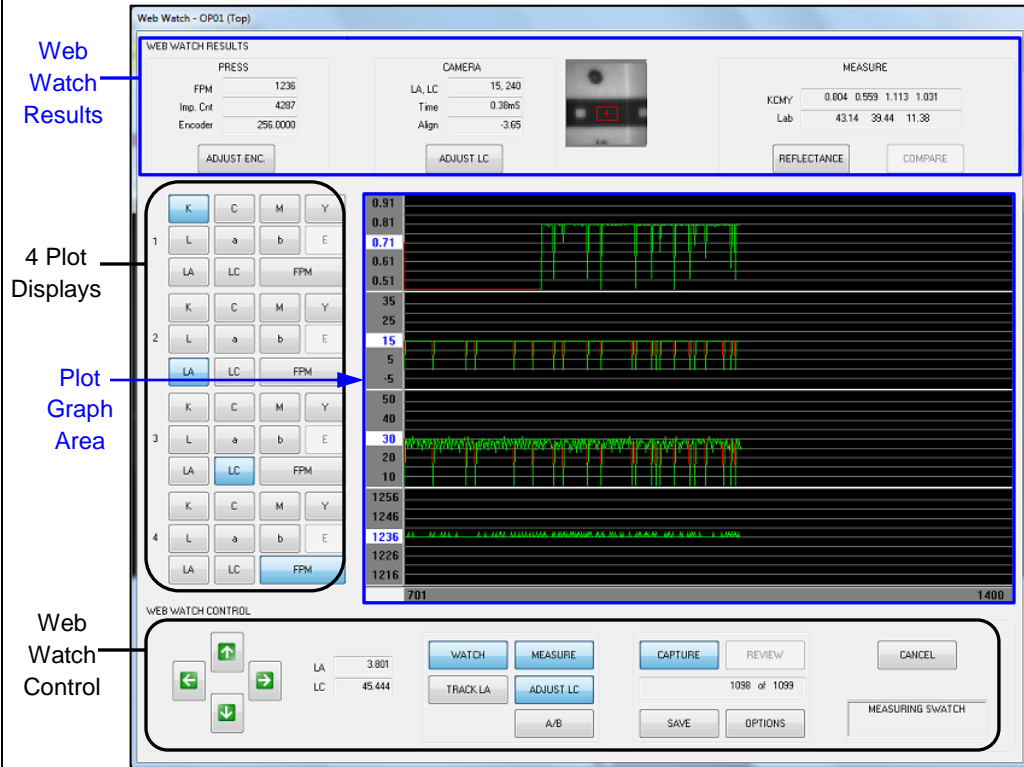


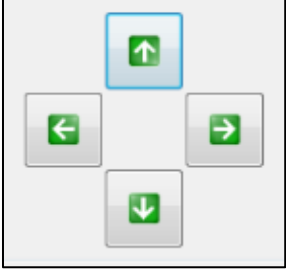
Figure 7.25: Web Watch Dialog – After Test

The Web Watch dialog is made up of the following sections:


- Web Watch Control
- Web Watch Results
- 4 Plot Displays
- Plot Graph Area

Web Watch Control

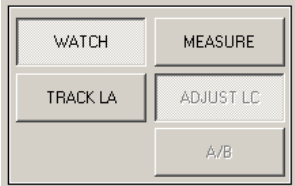
Arrows

	<ul style="list-style-type: none">➤ Up and Down arrows – During the standard Watch and/or Measure, these buttons adjust the LC position value. While in Adjust ENC mode, these buttons adjust the encoder remainder values by 0.0001. While in Adjust LC mode, these buttons adjust the LC target alignment value by 0.010 cm (0.004 in).➤ Left and Right arrows – During standard Watch and/or Measure, these buttons adjust the LA position value by 0.010 cm (0.004 in). While Track LA is active, these buttons adjust the LA position value by 0.40 cm (0.16 in), or one swatch.
---	--

LA / LC Values

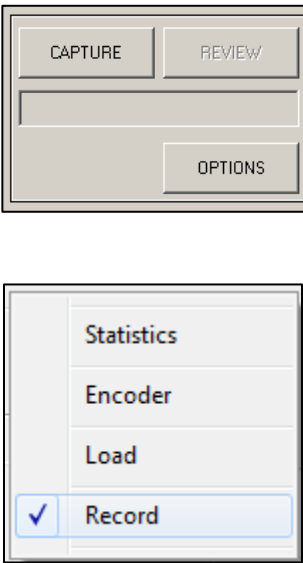
	<p>Windows display the values at the time the sample was taken.</p>
--	---

On-Press Toggle Buttons

	<ul style="list-style-type: none">➤ Watch – This option toggles the On-Press camera On and Off. The camera takes an image of the current head position. The LA and LC values at this position are displayed in the windows.➤ Measure – This option toggles the On-Press On and Off in the same way as the Watch option toggles the camera. The On-Press takes a measurement along with the camera image at the current head position. The LA and LC values at this position are displayed in the windows. This option is only available when Watch is active.➤ Track LA - This option toggles the On-Press from automatically adjusting the LA position based on the camera search results of the image. If the image search failed, no LA position adjustment is made. This provides the operator with the ability to watch a swatch, without manually adjusting the LA position, during a normal web weave movement. This option is available only when Watch is active.
---	---

	<ul style="list-style-type: none"> ➤ Adjust LC – This option toggles the On-Press from adjusting its measurement location based on the image search results. When Off, the measurement is made at the LC position displayed in the LC window. When On, the measurement LC position is adjusted based on the image search results. For proper measurement results, this option should be active. This option is available only when Measure is active. ➤ A/B – This option toggles the Host plot displays between drawing a single plot line for all samples or drawing separate lines for even and odd impression samples.
--	---

Capture / Review Buttons

 <p style="text-align: center;">Options Menu</p>	<ul style="list-style-type: none"> ➤ Capture – This option toggles the capture feature On and Off. This feature stores each sample that will either be saved or displayed later. If, during this Web Watch session, the capture option has been turned on and then off, a prompt to reset to zero will be displayed when the option is turned on again. The window below this button displays the captured sample count. This option is only available when Watch is active. ➤ Review – This option toggles the captured samples review mode which allows the operator to scroll through the captured samples and see the values in the appropriate windows. The window below this button displays the currently displayed sample as well as the total number of captured samples. This option is available when Watch is NOT active and when there are results which have been captured ➤ Options - This option has a drop-down menu of additional Web Watch operations. See section below.
--	---

Options

The additional Web Watch operations are Statistics, Encoder, Load, and Save.

Statistics - Toggles the display of additional statistics on the captured samples.

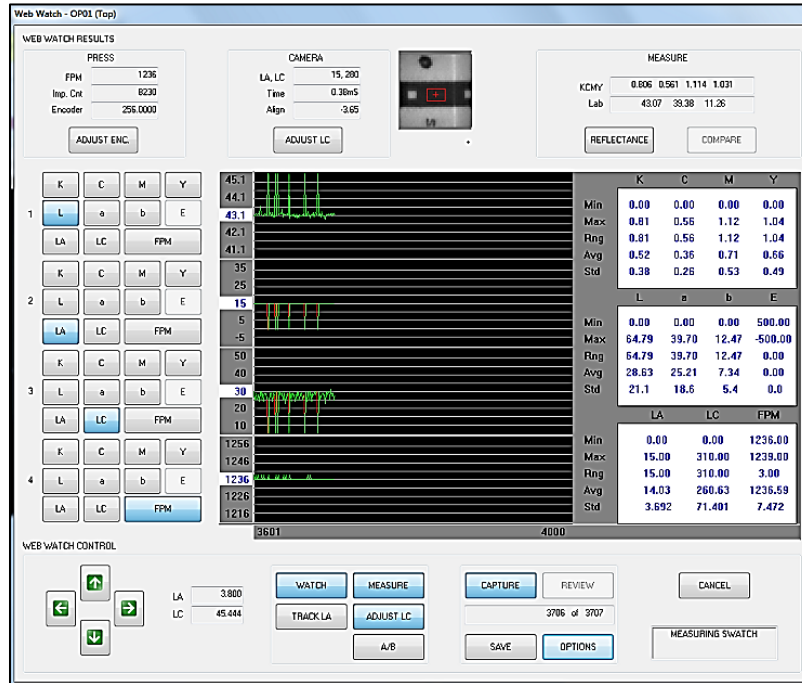


Figure 7.26: Statistics Displayed

Encoder - Toggles the display of the samples encoder index values used for the camera, measure and adjustment operations

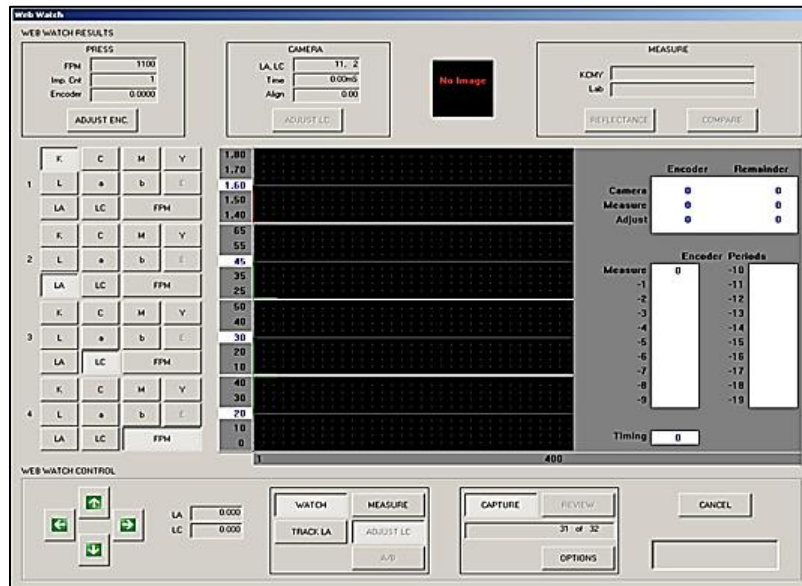


Figure 7.27: Encoder Displayed

Load – Provides the means to load previously captured Web Watch results for display from either the Host floppy drive A, CD drive D, or the Color Manager.

Select the **Load** option and the Web Watch - Open dialog displays.

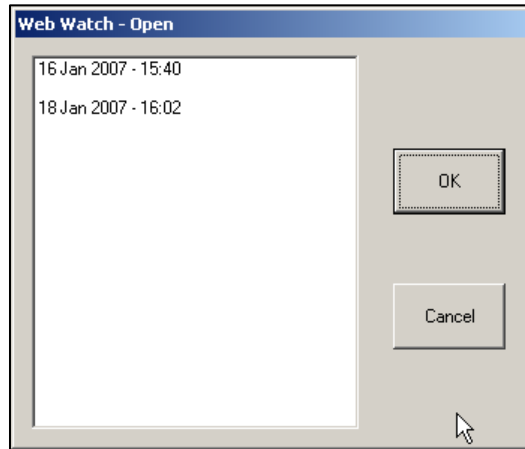


Figure 7.28: Web Watch – Open Dialog

Select a **date**, touch the **OK** button, and the data changes in the Plot display area.

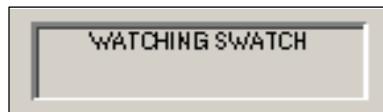
Save – Provides the means to save the captured Web Watch results to either a floppy drive A, CD drive D, or the Color Manager.

Cancel

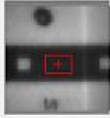
This option allows the operator to exit the Web Watch view or return to the color bar view to select another location.

Message Box

Messages describing actions taken at this screen, such as “Watching Swatch,” display in the message box.

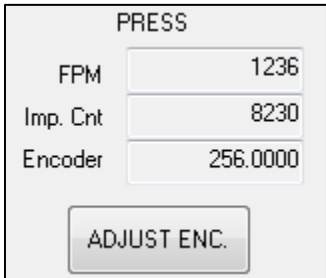


Web Watch Results

WEB WATCH RESULTS		CAMERA		MEASURE	
PRESS FPM 1236 Imp. Cnt 8230 Encoder 256.0000 <input type="button" value="ADJUST ENC."/>		LA, LC 15,280 Time 0.38mS Align -3.65 <input type="button" value="ADJUST LC"/>		 KCMY 0.806 0.561 1.114 1.031 Lab 43.07 39.38 11.26 <input type="button" value="REFLECTANCE"/> <input type="button" value="COMPARE"/>	

Press


The Press dialog displays the current press speed in FPM, the impression count, and the encoder value at the time the sample was taken, as displayed in the LA and LC boxes (see below).

	<ul style="list-style-type: none"> ➤ Adjust ENC. button – This button toggles the ability to use the Up and Down Arrow buttons to adjust the current encoder value. ➤ The Up and Down Arrow buttons adjust the remainder by one. ➤ The Page Up and Page Down Arrow buttons adjust the integer value by one.
--	---

If the encoder value is not correct, the image will appear to scroll up or down in the display window.

Camera

The Camera dialog displays the image search results for LA and LC, the search time in milliseconds, and the current LC target alignment value at the time the sample was taken. LA is location across the web and LC is location at the center of the web.

	<p>Adjust LC button – This button toggles the ability to use the Up and Down Arrow buttons to adjust the LC target alignment value being used during the measurement.</p> <p>This provides a means of visually testing for the proper alignment value as well as testing the results of different values</p>
---	---

Measure

The Measure dialog displays the sample measurements results in density and Lab.

MEASURE

KCMY 0.806 0.561 1.114 1.031

Lab 43.07 39.38 11.26

REFLECTANCE
COMPARE

- **Reflectance button** – This button toggles the display of the sample measurement results in a reflectance curve.
- **Compare button** – This button toggles the reflectance display to refresh with each sample or to overwrite the current sample. Overwriting provides a quick comparison of similar measurements

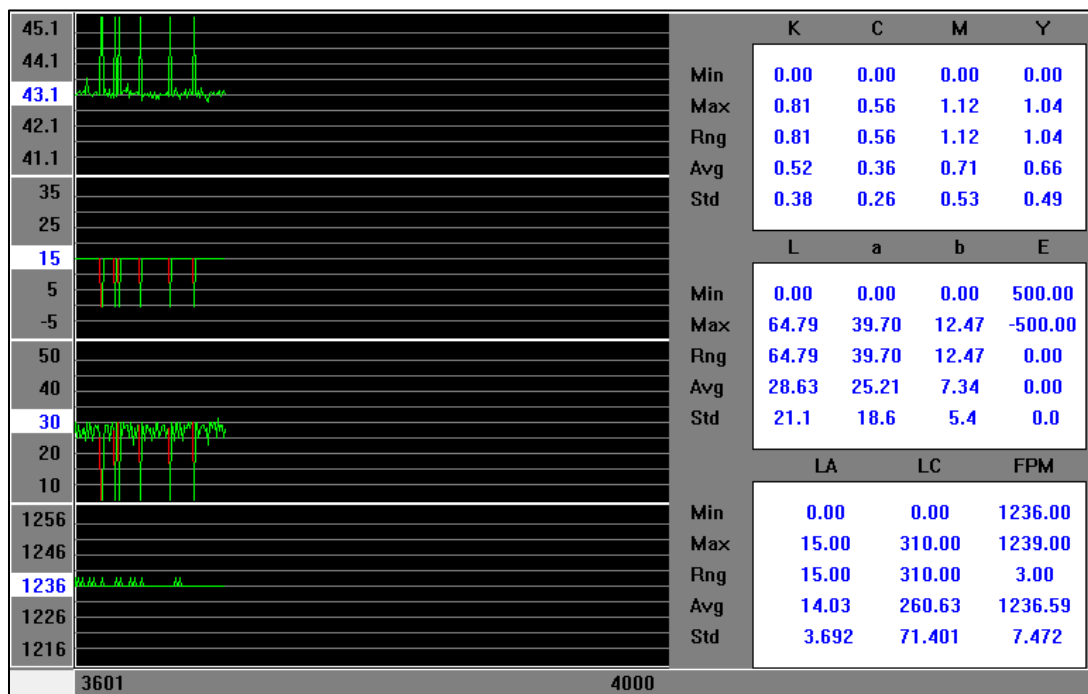
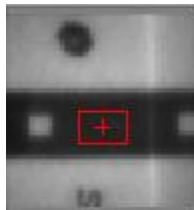


Figure 7.29: Data Display Area Showing Reflectance Data

Web

The Web dialog shows a miniature of the web with the section being displayed on the screen, enclosed in a small red box.



Plot Displays

There are four plot displays. Each can be individually selected to display any of the available options.

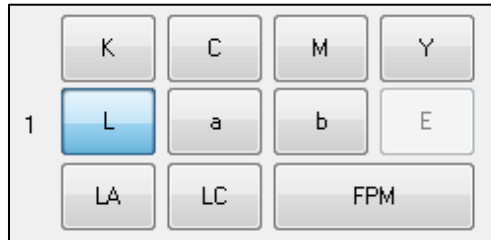


Figure 7.30: Plot Display buttons

K	Plots the measurement “K” density results
C	Plots the measurement “C” density results
M	Plots the measurement “M” density results
Y	Plots the measurement “Y” density results
L	Plots the measurement “L” Lab results
a	Plots the measurement “a” Lab results
b	Plots the measurement “b” Lab results
E	Plots the measurement “E” Delta E results
LA	Plots the measurement LA search results
LC	Plots the measurement LC search results
FPM	Plots the press speed

When a plot mode is selected, the current samples value is used as the plots nominal (center line) value. This value may be changed at any time by touching the plot’s nominal value box and entering a value.

A zoom feature is available by touching anywhere within the four plots graph area. When selected, Plot #1 is zoomed to fill the area of all four plots. The values plotted may be selected by selecting the appropriate option button for Plot #1. Touching anywhere within the plot area restores the display to all four plots.

7.6 Color Compliance Check



This option allows the installer to perform a color compliance check, which is an automated process used to verify that the scanner conforms to color standards Status T or Status E.

The process requires a custom color standard and the values for that standard, which are listed in an accompanying folder.

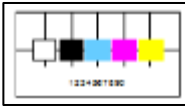
Before Beginning the Procedure

- The color standard must be installed (see below).
- The On-Press unit must be on.
- All scanning must be stopped.
- A form must be loaded in Clarios. On the Clarios workstation monitor, choose the form for the scan head that is to be checked (top or bottom).
- The On-Press module calibration assemblies must be clean and free of contaminants.

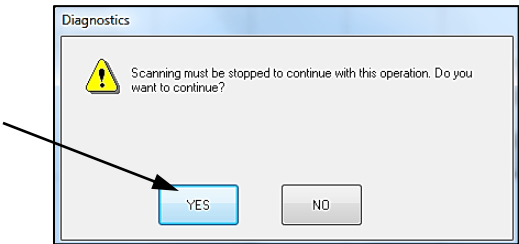
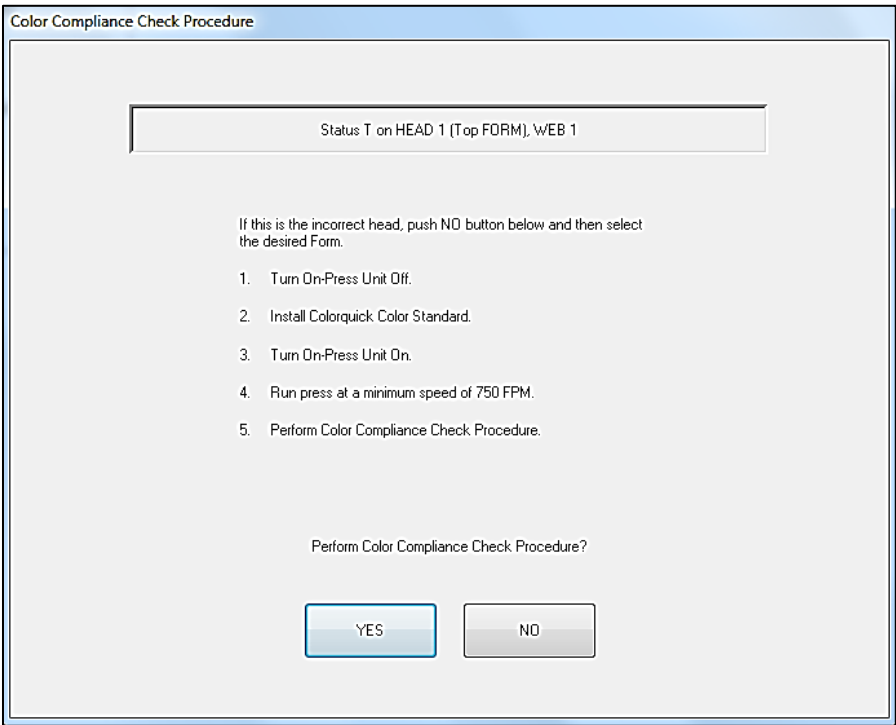
Refer to *Service Note 352* and inspect the type of calibration plaque mounting. There will be a special procedure to check the color conformance for these systems. The customer is expecting high compliance to the calibration standard for inter-instrument agreement between Clarios systems.

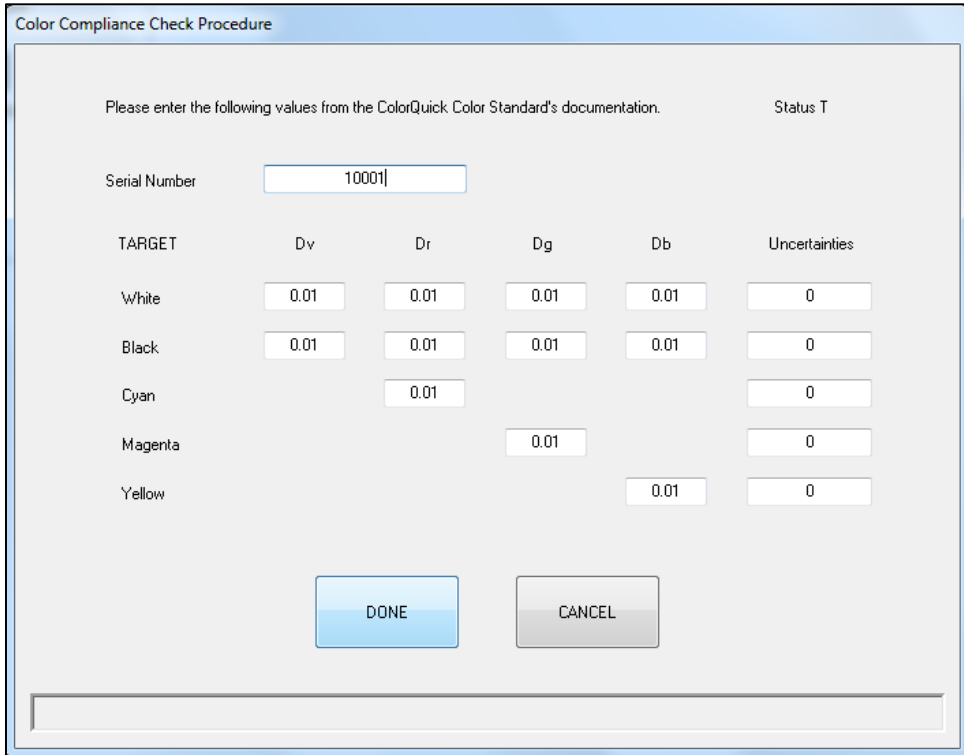
Install the Color Standard

1	Turn off power to the On-Press unit using the external enclosure power switch.
2	Move the scan head out along rail to allow access to the calibration assembly.
3	Clean the calibration plaques. Wipe plaques with a clean, soft cloth dampened with alcohol or mild cleanser (do not use dry cloth or abrasive cleaner). Be sure plaque looks white, with no visible defects or residues, especially in middle of the square. There may be chips at the edges, but not in the center of plaque.
4	Verify that the serial number on the color standard matches the serial number on the color standard card.
5	Slide the color standard under the spring clip on the calibration assembly. Note: It does not matter which direction the color standard card is inserted under the clip, but it is best to install it with the serial number label to the outside. This prevents the spring clip from scraping off the label or marring the printed serial number on the label.


6	Move the scan head back to the home position.
7	<p>Turn on power to the On-Press unit.</p>  <p>Figure 7.31: Example AVT Color Standard</p>

Start Color Compliance Check Procedure

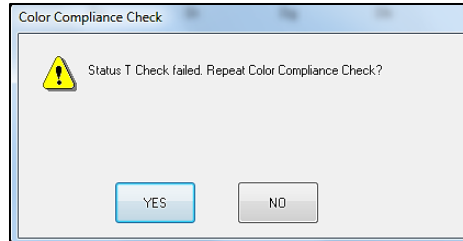
1	<p>At the Diagnostics view, touch the camera icon and the Diagnostics Decision dialog displays. The message asks: "Scanning must be stopped to continue with this operation. Do you want to continue?".</p> 
2	<p>Touch the Yes button to continue and the Color Compliance Check Procedure dialog #1 displays.</p>  <p>Figure 7.32: Color Compliance Check Procedure Dialog #1</p>

3	This dialog box asks “If this is the incorrect head, push No button below and then select the desired Form.
4	<p>If the five instructions are satisfied, touch the Yes button and the Color Compliance Check Procedure Dialog # 2 displays.</p>  <p style="text-align: center;">Figure 7.33: Color Compliance Check Procedure Dialog # 2</p>

Entering Color Standard Values

1	<p>Enter your color standard's serial number and the density values for white, black, cyan, magenta, and yellow swatches and for the uncertainties for each swatch.</p> <p>These numbers are listed on the label inside your color standard's folder.</p>
2	<p>By default, all values are set to zero (0). Touch a window and the numeric keypad appears. Enter the number by touching the number keys and then press . Repeat until all the values from the card are entered. When finished, touch the Done button.</p>

3 You are prompted to confirm that you want to use the values as entered.



When you click **Yes**, the procedure begins automatically. The status of the check is displayed at the bottom of the screen. If you click **No** or **Cancel**, you return to the input screen. Change the values as required, then click **Done**.

Note: The density values for the standard need to be entered only the first time the check is performed. But if you have more than one standard (recommended), the values need to be entered again each time you change standards. Always check the density values on the screen against the values printed on the label in the red folder.

Color Compliance Check Results

When the check is complete, one of the following messages is displayed.

On-Press Head Complies with Color Standard

The test passed; all values are within tolerance for the standard. Click No when prompted to repeat the test. Remove the color standard from the On-Press calibration assembly and resume Clarios operation.

On-Press Head Does Not Comply with Color Standard

The test failed because one or more of the values was outside the tolerance for the standard. When prompted, run the test again to verify the results. If repeated failures occur, consider these items:

- Inspect the swatches on the standard. There should be no scratches, stains, fingerprints, or smudges. If there are problems with the swatches, the standard should be replaced. A clean, dry, white cotton cloth should be used to lightly wipe the standard. Use no cleaning agents or other solvents on this standard.
- Check the expiration date on the standard. Expiration date is one year from the date the standard was shipped. The standard may measure correctly after this date, but AVT recommends that the standard be replaced after this date.
- Check the standard with another densitometer calibrated to Status T (or Status E). Be sure the device is calibrated according the manufacturer's procedure and calibration standard. The values read on the densitometer should be with 0.02 or 2% of the stated values for the Clarios standard.

If these items indicate the scan head does not comply with the standard's values, contact AVT Customer Service. The content of the COLORSTD.LOG file from the Color Manager may be helpful when talking with AVT.

Color Standard Check Aborted

The test was terminated because press speed was too slow, the wrong scan head was selected, no color standard was installed in the calibration assembly, or the On-Press unit was not online. Correct the problem, then begin the test again.

After the Check

- When the color compliance check is finished, turn off power to the On-Press unit and remove the color standard from the calibration assembly. Put the standard and its folder in their case and store in a safe place. Turn on power to the On-Press unit.
- Test log data for the color compliance check is recorded in a text file named COLORSTD.LOG on the Color Manager. This log is a text file with test results. It may be printed as verification that the Clarios system is providing accurate measurements using the Status T or Status E filter set per ISO 5-3 and ANSI CGATS.5-1993.

Revision History

Revision Date	Revised By	Version / EO	Section/Page Numbers	Revision Description
4/1/2010	SW	V1.30A (15315)	All	Initial release.
3/17/2015	SL	V1.30B (16630)	Front matter	Updated PDF for address and logo.
7/5/2017	SW	V1.80A (17294)	All	<ul style="list-style-type: none"> • Initial release of V1.8. • Converted V1.3 from Frame to Word and updated all screen shots. • Incorporated updates for V1.4 – V1.8. • Added numerous sections from the CQ Troubleshooting Guide.